

The Best Laid Plans...
Helping Teachers Foster Intrinsic Motivation in Their Students

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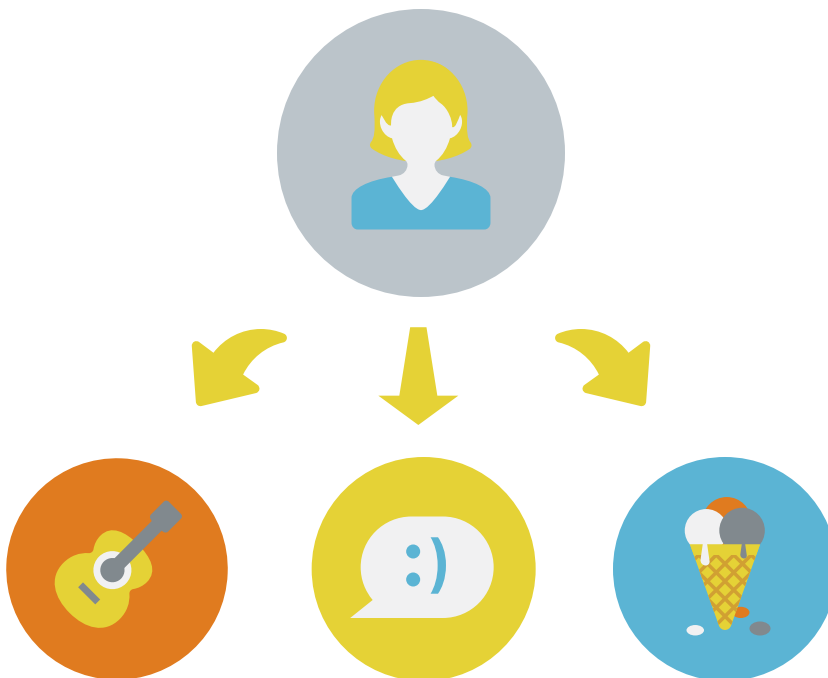
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(1) ***Dedication***

To my loving mother Laura Walters, for supporting my basic needs of autonomy, relatedness, and competence by allowing me to try new things, providing words of encouragement, and dispensing an endless supply of treats.



(2) **Abstract**

High school students suffer from a lack of intrinsic motivation to participate in class. In an attempt to combat this lack of motivation, educators often provide students with rewards for participation. However, self-determination theory—a theory of motivation—states that these external incentives contribute to students' lack of intrinsic motivation.

Research has shown that teachers' classroom practices directly impacts students' feelings of intrinsic motivation by contributing to or detracting from students' basic psychological needs of autonomy, relatedness, and competence. However, high school teachers are not always aware of autonomy-supportive strategies for improving students' feelings of intrinsic motivation. Furthermore, teachers that are aware of autonomy-support strategies often have aversions to utilizing them in the class because of negative misconceptions associated with them.

This thesis describes how a user experience design process established design characteristics of a product teachers can use to help them learn autonomy-supportive strategies for fostering intrinsic motivation in their students. By employing user experience design methods, characteristics of a solution that is empathetic to high school teachers' needs were established. The results from this research suggest that user experience related design methods can contribute to motivational psychology as well as education.

Keywords: intrinsic motivation, self-determination theory, user experience design, design process, education, motivation, interaction design

(3) **Introduction**

Despite a wealth of research on the subject (Assor et al. 2002; Assor et al. 2009; Kusurkar et al. 2011; Deci and Ryan 2000b; Lin et al. 2001), high school students lack intrinsic motivation to engage in classroom activities like group discussion or in-class assignments (Legault et al. 2006). A lack in motivation among American high schools students is often cited by both high school teachers and students as an inhibition to student achievement (Guilloteaux and Dornyei 2008). High school students suffer from amotivation, or “the state in which individuals cannot perceive a relationship between their behavior and that behavior’s subsequent outcome” (Ford 2013, p.101). Research has shown that amotivation among students can be caused by a variety of factors including, students’ personal interests, perceived abilities, and relationships with peers and teachers (Ford 2013).

Intrinsic motivation is “the inherent tendency to seek out novelty and challenges, to extend and exercise one’s capacities, to explore, and to learn” (Deci and Ryan 2000a, p. 70). One way teachers combat this problem is by incentivising students with external rewards (e.g., candy, school supplies, extra credit points) in exchange for their participation (Reeve 2009; Niemiec and Ryan 2009). In spite of over 25 years of research showing the negative effects of external rewards on students’ intrinsic motivation to engage in and perform classroom activities, teachers still use them (Niemiec and Ryan 2009). Admittedly, this strategy for enhancing student motivation is often a result of external pressures placed on teachers from administration to improve and increase student performance (Reeve 2009). In fact, external pressure on teachers—especially if it affects their job—is one of the main factors that inhibit teachers from using more proven strategies of improving intrinsic motivation of students (Reeve 2009).



Amotivation of students



External rewards

A more favorable strategy to improve student intrinsic motivation is to harness their natural curiosity (Niemi and Ryan 2009; Assor et al. 2002; Deci and Ryan 2000b). However, teachers' misuse of external motivators suggests a misunderstanding of motivation and how it can be properly leveraged in students (Reeve and Halusic 2009). Previous research from Avi Assor, Haya Kaplan, Ofra Feinberg and Karen Tal, has shown teachers learning and practicing motivational strategies together as a path to improving student motivation (2009). Because teachers already have external expectations placed on them from outside forces such as administrators, societal norms, parents, and school policies (Reeve 2009), an external initiative imposing more responsibilities for teachers to take on, would likely be perceived as threatening or disruptive to their existing obligations (Assor et al. 2009). To avoid adding more external pressure on teachers, a tool could be developed that recognizes their current responsibilities but also teaches them how to foster more intrinsic motivation in their students.

A human-centered design process—specifically user experience design—can facilitate how such a tool would be created. Although usually in reference to digital experiences (e.g., software, apps, video games), user experience design can also be applied to physical products (Cooper 2014). User experience (UX) design is described by Saffer as “facilitating interactions between humans through products and services” (Saffer 2009, p. 4). User experience design takes a human—or user—centered approach to product design, by focusing on the needs of the intended users. Furthermore, a human-centered approach can be helpful for creating intrinsically motivating products (Krippendorf 2004). By employing UX research methods to gain an understanding of high school teachers' needs, a tool can be designed to fit within teachers' existing responsibilities, while still providing new information and techniques to intentionally foster intrinsic motivation in their students. The design of a new toolkit will allow teachers to integrate autonomy-supportive behaviors for fostering intrinsic motivation in students with their current classroom practices. With this in mind, the question driving this research project is defined below. The subsequent sections of this document will provide a comprehensive overview of the planning and analysis of a design-led solution for this problem space.



Human-Centered Design Process

(4) Research Question

*How might a **user experience design process** enable the design of a tool to help high school teachers integrate **autonomy-supportive** behaviors into current classroom practices in an attempt to foster **intrinsic motivation** in their students?*

User Experience Design Process:

“Facilitating interactions between humans through products and services”
(Saffer 2009, p. 4)

Autonomy-Support:

Actions or inactions which positively influence one’s perceived feelings of relatedness, autonomy, and/or competence

Intrinsic Motivation:

“The inherent tendency to seek out novelty and challenges, to extend and exercise one’s capacities, to explore, and to learn” (Deci and Ryan 2000a)

(5) **Justification**

(5.1) Overview

Humans have a natural tendency to explore their surroundings, foster relationships with others, and acquire knowledge based on what they find interesting or valuable (Deci and Ryan 2000b). Generally, motivation is the reason one has for enacting these tendencies, but not all motivation occurs naturally. This research centers around an understanding of human motivation, its underlying factors, and how it can be affected. As such, a theoretical model for motivation is explained below.

According to psychologists Edward Deci and Richard Ryan, Self-Determination Theory (SDT) is a theory of motivation that includes three different major types of motivation: amotivation, extrinsic motivation and intrinsic motivation (2001). SDT places these types of motivation on a spectrum based on perceived locus of causality. Locus of causality refers to whether a goal or task is perceived as emanating from the self (internal) or from an outside influence (external) (Deci and Ryan 2001). The degree to which a task is perceived as internal or external determines the regulatory style. SDT posits that the more internal locus of causality a task or goal is perceived to have, the more self-determined it is, while more external locus of causality is less self-determined. Various studies have proven that supporting students' basic needs of relatedness, autonomy, and competence alters their perceived locus of causality to be more internal, leading to higher intrinsic motivation and improved performance (Assor et al. 2009; Assor et al. 2002; Reeve and Halusic 2009; Deci and Ryan 2009).

(5.2) Basic Psychological Needs

As noted above, SDT describes three basic psychological needs that, when supported in students, contribute to higher levels of intrinsic motivation. A description of these needs will provide greater insight into how outside forces can affect internal psychological processes that determine a student's feelings of intrinsic motivation. Relatedness is the extent to which someone feels they are accepted by the social and cultural groups to which they belong. A person's sense of relatedness is affected by the extent to which they feel respected, trusted, and appreciated in their social and cultural environments (e.g., work, home, school, etc.) (Deci and Ryan 2000b). For instance, if a student feels as though her teacher is mocking her, she would likely experience diminished feelings of relatedness and thusly intrinsic motivation in the class. This holds true even if the teacher was not mocking the student, and the student just perceived the teacher's comments as mocking.



Relatedness is affected by
feeling respected

Autonomy refers to “the experience of integration and freedom” (Deci and Ryan 2000a). It isn't enough for a person to choose what they do; what they choose to do must also be congruent with their personal values and goals. For example, if a teenager is being coerced into committing vandalism by his peers—an activity not aligned with the teen's personal goals and interests— and chooses to participate, SDT predicts that it is more likely the teen would experience the situation as controlling rather than autonomous, even though the teen was given a choice.



Autonomy is affected by
perceptions of choice

Competence is the perception of one's own ability to perform a given task. People experience adequate levels of competence when they feel a behavior has been, or can be, enacted effectively (Niemiec and Ryan 2009). For instance, if a student sees herself as a poor reader, she would likely have an aversion to reading aloud in class because she has low competence in her ability to read and would feel the task as controlling. Similar to autonomy and relatedness, competence is linked to perception. If a student thinks they can't do something well, then they will have low competence in that task even if they have previously performed the task well. Feelings of competence can be supported by providing feedback relevant to the actions or strategies taken, as well as providing a rationale for taking the action that is aligned with personal goals and interests.



Competence is affected by
perceptions of choice

By providing support for these needs, people feel higher levels of intrinsic motivation, self-efficacy, and self-esteem (Niemiec and Ryan 2009). However, when one or more of these needs becomes inhibited, people feel lower levels of intrinsic motivation, higher levels of ill-being, and are much less likely to internalize external goals. Support for these basic psychological needs directly affects where one's motivations fall on the spectrum of motivation.



fig. 5.1 Spectrum of motivation (Deci and Ryan 2000a)

(5.3) The Spectrum of Motivation

As previously mentioned, the three main types of motivation—amotivation, extrinsic and intrinsic—exist on a continuum (fig.5.1) based on the extent to which they are felt as internally or externally regulated. A more detailed discussion of the types of motivation and their respective regulatory processes is necessary to illustrate why some motivational strategies can be more effective than others.

(5.4) Amotivation

The complete lack of desire to pursue a goal, or amotivation, is placed at the beginning of the SDT spectrum. Amotivation occurs when a person feels a task will have an undesired result, places no value in the task, or does not feel competent to do it. Amotivation contrasts with extrinsic and intrinsic motivation in that it lacks both deliberateness and incentive (Deci and Ryan 2000a). In other words, no locus of causality is present. This could be a task or goal that either lacks intrinsic motivation and does not yet have an external incentive (i.e., no reward or punishment was offered), or would be declined no matter the magnitude of incentive.

(5.5) Extrinsic Motivation

Situated between amotivation and intrinsic motivation is extrinsic motivation. Extrinsic motivation is the pursuit of a goal in order to attain or avoid a separable outcome (Deci and Ryan 2000a). Four segments of extrinsic motivation that vary in the extent to which they are felt as internal or external (fig. 5.2). More externally driven activities thwart feelings of intrinsic motivation and are felt as controlling, while more internally driven activities tend to foster feelings of intrinsic motivation and are felt as autonomous (Deci and Ryan 2000b).

External

The least autonomous type of extrinsic motivation is external (Deci and Ryan 2000a). External motivation occurs when one's pursuit of a goal is tied solely to the promise of an external reward or avoidance of external punishment. This type of motivation is the focus of operant theorists whereby positive and negative reinforcement is used to incentivize behavior (Skinner, 1957). Tasks that are externally motivated often feel like chore (e.g., washing the dishes to obtain an allowance).

Introjected

The next type of extrinsic motivation is introjected, which is perceived as somewhat external. Introjected regulation occurs when a goal is pursued in order to boost one's ego or avoid feelings of guilt or shame. Although the pursuit of a goal is internally driven by ego, the cause for pursuit is perceived as external. Introjected motivations often feel like an obligation (e.g., attending a work function outside of regular work hours). Both external and introjected types of motivation are viewed as originating outside of the self (external locus of causality), and therefore experienced as relatively controlling.

Identified

The next type of extrinsic motivation is identified. Identified regulation occurs when a task or goal is consciously valued and viewed as personally important (Deci and Ryan 2000a). This type of motivation is perceived as having a somewhat internal locus of causality and is therefore experienced as autonomous (Deci and Ryan 2000a). Tasks of this nature are usually described as a responsibility or duty (e.g., calling 911 to report a crime that was witnessed).

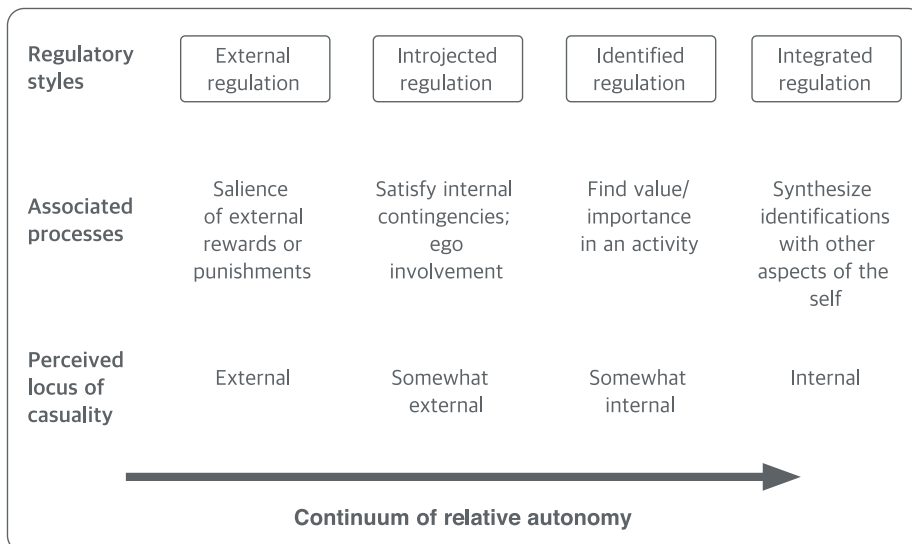


fig. 5.2 Continuum of extrinsic motivation (Niemi and Ryan 2009)

Integrated

Integrated regulation is the most internal and autonomous form of extrinsic motivation. Integrated motivation occurs when a goal is seen as aligning with personal values and interests and is accepted as a part of the self (Deci and Ryan 2000b). This type of motivation can be described as a passion (e.g., playing a musical instrument). For all intents and purposes, integrated motivation feels like intrinsic motivation because they both have completely internal locus of causality and are self-determined.

(5.6) Intrinsic Motivation

On the far end of the motivation spectrum lies intrinsic motivation. Actions taken in the absence of external encouragement that are inherently interesting and enjoyable are intrinsically motivated (Deci and Ryan 2000a). Intrinsic motivation is perceived to have a completely internal locus of causality, which means it is experienced as autonomous. When people are intrinsically motivated, they feel compelled to explore, play, and engage in behaviors that are challenging and fun. Intrinsic motivation often feels like a purpose for being.

(5.7) Making the External, Internal

Because student performance is directly linked to extrinsic goals and outcomes (e.g., grades), one may conclude that students' intrinsic motivation would always be inhibited. However, it is not external outcomes themselves, but the emphasis of external outcomes over internal that inhibit one from naturally pursuing an activity or goal. As discussed previously, support for the basic needs can foster intrinsic motivation in students. In order to understand how a tool would be designed to show teachers how to use autonomy-support in the classroom, examples of autonomy-supportive strategies are provided.

SDT states that externally motivated tasks and goals can go through a process of internalization, through which more external and controlling tasks are identified as being valuable and become integrated with the self and become more internal and autonomous (fig. 5.3). In other words, people can learn to experience an extrinsic goal as intrinsic over time. When people feel intrinsically motivated they try harder, seek personal growth, and feel a greater sense of well-being so it stands to reason that educators would want to take advantage of these effects. Internalization can be facilitated by behaving in a manner that supports relatedness, autonomy, and competence, also referred to as autonomy-support.

Teachers can provide autonomy-support to their students in several ways. According to psychologist Johnmarshall Reeve, teachers can first nurture already existing inner motivational resources of students by tailoring lessons around students' interests, choices, preferences, intrinsic goals, personalization, sense of challenge, and the basic psychological needs (2009). By actively fostering these natural inner resources, teachers can help students become more engaged at the introduction of new material and improve engagement throughout a learning activity (Reeve 2009).

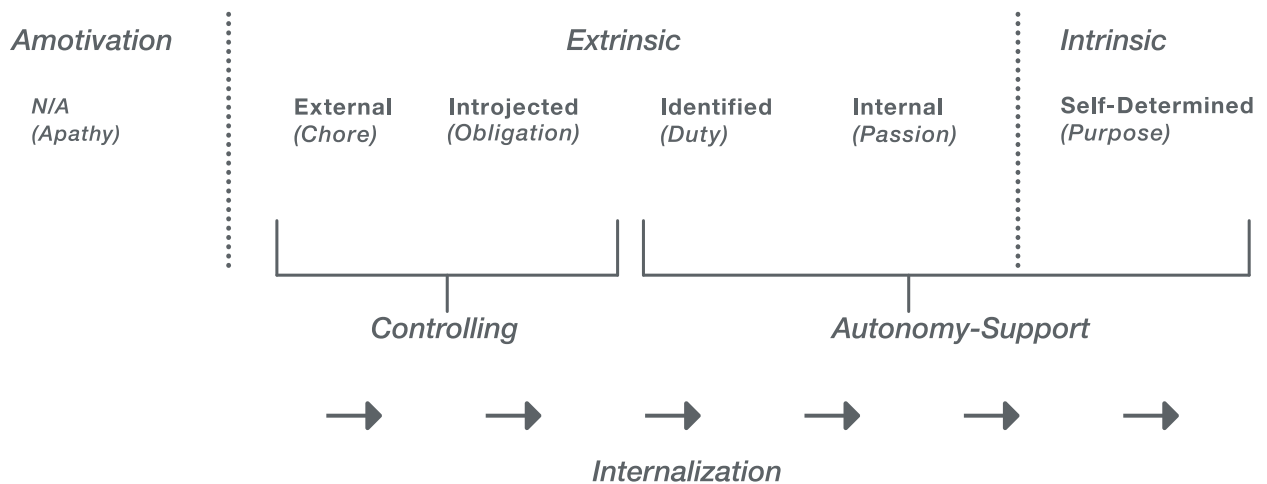


fig. 5.3 Internalization of external motivators through autonomy-support (Walters 2015)

Providing explanatory rationales (Reeve 2009) by connecting inherently uninteresting tasks to intrinsic goals (Assor et al. 2009) is another strategy teachers can use to provide autonomy-support. Reeve states “Explanatory rationales are not contrived excuses for learning but are, instead, scaffolds to help students mentally transform the uninteresting or unvalued activities they face in the classroom into something of greater personal value” (2009, p. 169). Teachers can help students to connect externally perceived goals and activities to their existing internal goals and values by raising students’ awareness of the existing connection(s) between the two (Assor et al. 2002).

Exhibiting patience for student learning by taking time to listen to students while providing encouragement and scaffolding is also autonomy-supportive. Providing an environment where students feel they can learn at their own pace helps them feel trusted by their teachers in their ability to perform.

Because students are often required to perform tasks that are uninteresting and adhere to rules that are unvalued, behavioral issues may occur. These issues can often manifest in the form of complaints and negative comments such as “other teachers don’t ask us to do this”, “this is boring”, “it’s too hard”, etc. When comments like this are acknowledged or accepted by teachers, it shows students that their opinions and views are understood and puts teachers in the position of receiving negative comments constructively (Reeve 2009). It is important to note that negative comments or expressions that go beyond complaining into the realm of aggression and harm may call for more controlling behavior from teachers (i.e., punishment) (Reeve 2009).

Relying on informational, non-controlling language is yet another way teachers can provide autonomy-support to students. Teachers who use prescriptive and pressuring language to corral students toward predefined solutions, create a rigid and controlling environment (Reeve 2009). Short, and often recurring directives (e.g., “hurry up”, “let’s go”, “stop that”) and compliance hooks (e.g., “should”, “must”, “have to”) feel controlling to students because they inhibit the students’ autonomous self-regulation and replace it with external regulation (Reeve 2009).

Actions that inhibit autonomy-support or frustrate feelings of relatedness, competence, and autonomy—and thus intrinsic motivation—are referred to as controlling. Examples of controlling behavior can be recognized as the opposite of the previously mentioned autonomy-supportive behaviors (i.e., hindering natural motivations, not providing explanatory rationales, being impatient, ignoring or dismissing student comments, and using authoritative language) (Reeve 2009).

Although teachers can enact autonomy-supportive behavior on their own, legitimate reasons for adopting a more controlling style instead (Roth and Weinstock 2013). Firstly, teachers are both responsible and accountable for their students’ performance, for which they have no direct control (Reeve 2009). Teachers also inhabit a naturally powerful social role, which makes it easier to adopt controlling behavior (Reeve 2009). Furthermore, teachers are often evaluated as more competent when using controlling strategies over autonomy-support, which causes them to view controlling styles as culturally valued (Reeve 2009). Control is also often inaccurately equated with a structured learning environment, while autonomy-support is inappropriately associated with a disorderly one (Jang et al. 2010). Similarly, teachers usually tend to endorse the maximal-operant principle, which means they believe long-term interest is positively correlated with the size of a reward (Reeve 2009). Incidentally this notion highlights teachers unawareness of the negative effects of external motivation (Reeve and Halusic 2009). Teachers also use controlling strategies as a means of getting passive or unmotivated students to engage. Finally, teachers may already have a naturally controlling disposition.

(5.8) Inhibitions to Autonomy-Support in the classroom

Along with valid reasons for adoption of a controlling style, teachers also have misgivings concerning the efficacy as well as implementation of autonomy-support in the classroom (fig. 5.4). When trying to implement SDT principles in the classroom, teachers have eight commonly occurring questions regarding the ‘how-to’ of autonomy-support (Reeve and Halusic):

- What is the goal of autonomy-supportive teaching?*
- How is autonomy-supportive teaching unique?*
- Does autonomy support mean permissiveness?*
- How would I encourage students’ initial engagement in learning activities?*
- How could I help students maintain their engagement?*
- What would I say? / How might I talk?*
- How would I solve motivational and behavioral problems?*
- How do I know if I provided instruction in an autonomy-supportive way?*

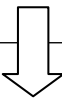
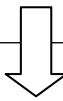
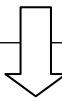
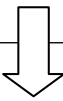
Teacher-asked questions about an autonomy-supportive motivating style			
Pre-lesson reflection	Motivating students	Solving problems	Post-lesson reflection
Q1: What is the goal of autonomy-supportive teaching? Q2: How is autonomy-supportive teaching unique? Q3: Does autonomy support mean permissiveness?	Q4: How would I encourage students' initial engagement in learning activities? Q5: How could I help students maintain their engagement?	Q6: What would I say? How might I talk? Q7: How would I solve motivational and behavioral problems?	Q8: How do I know if I provided instruction in an autonomy-supportive way?
 <ul style="list-style-type: none"> • Take the students' perspective • Display patience to allow time for learning 	 <ul style="list-style-type: none"> • Nurture inner motivational resources • Provide explanatory rationales 	 <ul style="list-style-type: none"> • Rely on noncontrolling language • Acknowledge and accept negative effect 	 <ul style="list-style-type: none"> • Take the students' perspective • Welcome students' thoughts, feelings, goals, and behaviors • Support students' motivational development
Recommended autonomy-supportive instructional strategies			

fig. 5.4 Common questions from teachers on SDT (Reeve and Halusic 2009)

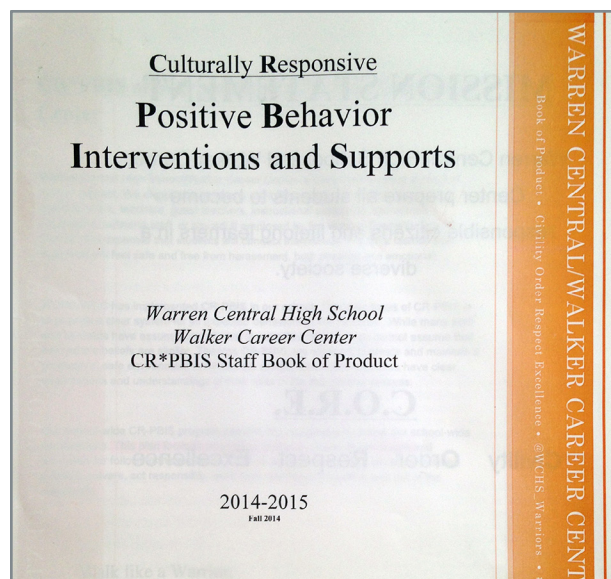
These questions reveal that teachers are under-informed about SDT and how to utilize its principles in the classroom. Reeve and Halusic use these questions to construct a framework to help teachers integrate autonomy support into classroom practice. The framework groups the questions into four categories: pre-lesson reflection, motivating students, solving problems, and post-lesson reflection

(5.9) Unsuccessful Solutions

Although students have a general lack of intrinsic motivation in the classroom, some current approaches to alleviate the problem exist. However, not all of the current solutions stem from the notion of fostering autonomy, competence, and mastery and instead focus on providing students with performance based incentives. One such school-wide initiative in the Culturally Responsive Positive Behavior Interventions and Support (CR-PBIS). This initiative focuses on teaching students desired behavior utilizing both positive and negative reinforcement and punishment schedules (Skinner 1957).

The CR-PBIS handbook suggests that a fake currency—"CORE Cash"—be distributed by teachers during each class period as a reward for following established etiquette and behavioral practices. The "CORE cash" can be used by the students to enter drawing for various prizes (e.g., tickets to school events, giftcards, school-related merchandise). The program also suggests that teachers offer words of encouragement to let the rest of the class know what an appropriate behavior is. Similarly teachers, are encouraged to reward students with writing utensils, candy, or other small tokens as a reward.

However, these extrinsic motivations only cover external and introjected forms of regulation, which according to SDT, are experienced as controlling. This means that the rewards and incentives offered will actually inhibit students' autonomy, relatedness, and competence, thus diminishing intrinsic motivation. In spite of the program's use of continuous and intermittent reward schedules as a means of behavioral conditioning, SDT enables people to predict that CR-PBIS will ultimately fail to help students internalize and value the prescribed desired behavior because of the emphasis on external and therefore controlling motivators. Never the less, other school-wide initiatives are built on the principles of SDT.



CR-PBIS Handbook for Warren Central Teachers

(5.10) Solutions for Students' Intrinsic Motivation

An assessment of a school-wide reform program based on SDT showed that teachers can learn to adopt more autonomy-supportive practices to foster intrinsic motivation in students (Assor et al. 2009). The framework for the program (fig. 5.5) is guided by two overarching principles: 1) organizational supports must be in place to provide teachers with autonomy-support (relatedness, competence, autonomy) and 2) learning groups should be put in place for teachers to share concerns, reflect on experiences, provide feedback for program improvements (Assor et al. 2009). These guiding principles help ensure that teachers could identify and internalize the value of SDT and autonomy-supportive practices in the classroom.

Principles

Creating organizational supports for teachers' need satisfaction during the change process	Learning groups and an implementation structure that help teachers experience new ideas and practices as valuable
--	---

Organizational Components

Small Teacher groups (10–12) that meet every 2–3 weeks throughout the year	Continual support for teacher's implementation efforts from the principal	Meetings with principal, group facilitators, and external change agents to continuously improve the change process
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Phases

Motivational/Cognitive 1	Motivational/Cognitive 2	Implementation/Troubleshooting	Shared Responsibility
<ul style="list-style-type: none"> Teachers learn about SDT (autonomy, competence, relatedness) Facilitators of group meetings encourage open criticism from teachers Teachers share how their needs of autonomy, relatedness and competence are affected by the day's process 	<ul style="list-style-type: none"> Teachers are taught how an autonomy-supportive class is mutually beneficial to students and teachers Create experience that motivates to share their own motivations 	<ul style="list-style-type: none"> Translating SDT to practical actions teachers can apply to classroom structure Five need-supporting Features: <ol style="list-style-type: none"> 1) a voice and roll for each student 2) limiting violence 3) Mastery of basic academic skills 4) Caring figure for each student 5) minimizing competition 	<ul style="list-style-type: none"> Sharing influence and responsibility with students

fig. 5.5 School reform framework based on SDT (Assor et al. 2009)

The program consists of four major phases. Phase A focuses on alleviating teachers' concerns by showing them that their basic needs will not be threatened as well as informing teachers about SDT, the basic needs, and the importance of those needs for learning (Assor et al. 2009). Phase B is used to show teachers that growth in students, as well as teachers, can only be achieved through autonomous self-regulation, which is facilitated by autonomy-supportive behavior. This phase is also used to elicit teachers' personal motivations for participating in the group and becoming a teacher (Assor et al. 2009). Phase C is when teachers begin to translate SDT principles into classroom practices within one of five categories: a voice and a role for each student, limiting violence (physical and verbal), mastery of basic academic skills, a caring figure for each student (peer and teacher), and minimizing competition as a means of promoting achievement (Assor et al. 2009). This phase allows teachers to take ownership of the strategies they create for their school as well as their particular classroom, which provides them with autonomy-support. Finally, Phase D aims to share responsibility of learning activities with students, thus creating a completely autonomous self-regulated classroom. Because this phase was not fully implemented in the program, little information about its merits or drawbacks was reported (2009). Of the fully implemented Phases (A,B,C) the teachers who participated in the reform program found the most value from learning the motivation continuum, the basic psychological needs, and the five classroom features 2) the small teacher groups for autonomy-support and 3) the holistic nature of the program (Assor et al. 2009).

(5.11) Opportunities for improvement

Although the reform program was successful in helping teachers become more autonomy supportive, it still had several drawbacks. First of which being the sheer scale of program itself involving all administrators and teachers, outside facilitators, and lasting 18 months. This means that teachers would have to wait for administrators to instigate and approve a program like this before more intentional autonomy-supportive practices in the classroom could be made available. The program also lacks clarity on specific actions teachers can take to support students' feelings of competence as well as autonomy. Furthermore, the heavy emphasis on the use of small groups to facilitate teachers' understanding and proper implementation of SDT principles and autonomy-support highlights a need to investigate how teachers could learn and implement the same ideals on their own. However, the teachers would still need to be provided with a means of autonomy-support to facilitate their internalization of SDT and its values (Deci 2009; Assor et al. 2009; Roth et al. 2007). To alleviate these issues, a framework was adapted from Ryan and Halusic's commonly asked questions combined with framework from the previously described reform program. A brief overview of the adapted framework is necessary to understand the context of the final solution.

(5.12) Proposed Solution

Teachers who do not have the opportunity to participate in school-wide initiatives still need a guide to teach them the meaning and value of SDT and autonomy-supportive behavior. The following framework (fig. 5.6) suggests that a toolkit be designed and evaluated to help teachers understand, internalize, and integrate SDT principles into their current classroom practices while providing them with autonomy support. The use of a tool can help teachers begin enacting autonomy-supportive behaviors in the classroom, without having to rely on external incentives or administrator-approved initiatives to do so.

Like the framework for the reform program previously described, the toolkit has two major guiding principles: 1) The toolkit, the tools within, and the ideals they suggest must not be felt as a threat to teachers' current responsibilities or classroom practices; 2) information in the toolkit must be presented to teachers in a way that makes them feel their basic psychological needs are supported. These are based on Assor's finding that internalization of new ideas makes it easier for teachers to implement those ideas (2009).



fig. 5.6 Proposed SDT toolkit framework based on reform program and common questions (Walters 2015)

The toolkit is divided into four different stages of learning SDT, each of which with its own tool to guide teachers through the respective phases. The four phases are based on both Reeve and Halusic's four categories of common teacher-asked questions as well as the first 3 phases of the framework provided by Assor. The phases include Onboarding, implementation, troubleshooting, and reflection. During onboarding, teachers would be provided information on SDT, the motivation spectrum, the basic psychological needs, and the mutual benefits of autonomy support to teachers and students in a way that helps teachers recognize that what they do currently is not as effective at motivating their students as what they could do (from "pre-lesson reflection" (Ryan and Halusic 2009) with phases A & B (Assor et al. 2009). The implementation phase's tool would provide teachers with practical actions they can perform in the classroom to provide initial autonomy-support to students as well as give them a forum to practice the suggested strategies (from "motivating students", "solving problems" (Reeve and Halusic 2009) and Phase C (Assor et al. 2009). In troubleshooting, teachers would be shown strategies to alleviate issues that inhibit their ability to provide autonomy-support to their students (e.g., violent student behavior, pressure from administrators, pressure from colleagues) combines Phase C (Assor et al. 2009) with "solving problems (Reeve and Halusic 2009) . Finally, a tool for reflection would be used to help teachers to identify what they do that is controlling/autonomy-supportive, and how to continue integrating autonomy-supportive practices in the class (from "post-lesson reflection" (Reeve and Halusic 2009) and Phase C (Assor et al. 2009). However, the scope of this research focuses on a possible tool for use during the implementation phase. This is just one of the various limitations for this research.

(6) Limitations

High school students lack intrinsic motivation to engage in classroom activities they feel are uninteresting, unvaluable, or beyond their ability (Gillet et al. 2012; Ford 2013) . Furthermore, common teacher practices to increase student motivation are often tied to external incentives, which actually diminish and inhibit the proliferation of both intrinsic and self-determined extrinsic types of motivation because they are felt as controlling (Deci and Ryan 2000b). Previous research shows that implementing ideals of SDT—such as supporting autonomy, relatedness, and competence—is a valid method of fostering intrinsic motivation in students (Deci and Ryan 2001a; Niemiec and Ryan 2009; Assor et al. 2002). However, high school teachers are generally unaware of SDT, its guiding principles and how they can be utilized in the classroom (Reeve 2009) to increase students' intrinsic motivation.

The goal of this research is to design a tool that enables teachers to learn about and practice specific behaviors they can take to be more autonomy-supportive toward students (fig. 6.1). In order to maintain transferability across educational contexts, the tool will be designed to integrate into the common pedagogical practice of lesson planning. This research will be used to determine teachers' perceptions of the tool as an effective means of learning about and integrating autonomy-support into their current responsibilities. This will include their opinions on both the content provided in the tool as well as the tool's usability. Because of the significance of providing autonomy-support for teachers to facilitate the internalization of new teaching strategies, it will also be pertinent to make note of comments from teachers that reflect whether they view the tool as autonomy-supportive or not.

Because of the wealth of previous research showing the positive effects of autonomy-support on intrinsic motivation, it is assumed that intrinsic motivation of students would be improved if teachers use the suggested autonomy-supportive behaviors provided in the tool. Therefore, no measurement of students' intrinsic motivation will be recorded or assessed. Similarly teachers' intrinsic motivation will not be measured or assessed because it is assumed that if the teachers perceive the tool as autonomy-supportive, then they would also experience an increase in intrinsic motivation, leading to improved internalization of SDT principles. Although teachers will be asked to test the effectiveness of the tool, teachers will not implement the information provided by the tool in class.



fig. 6.1 Designed solution limited to Implementation (Walters 2015)

(7) Methodology

An action-based research approach was utilized to explore how teachers can integrate autonomy-supportive behaviors into lesson plans, leading to improved intrinsic motivation within students. According to researchers Kathryn Herr and Gary L. Anderson action-based research is generally defined as “inquiry that is done by or with insiders to an organization or community, but never to or on them” (2005 p. 3). In other words, the people who are affected by the problem within the context of investigation are required to have some level of input on the solution to be created. Action-based research is distinct from scientific research in that it seeks to understand the context of investigation and affect change within it (Herr and Anderson 2005). The process of action-based research is a cyclical model that calls for the researcher to:

- 1) Develop a plan of action to improve the current status,
- 2) Enact the plan,
- 3) Observe the effects of action in the context it occurs, and
- 4) Reflect on the effects to establish a basis for further plans and actions (Herr 2005).

This model of research coincides nicely with UX design, which also calls for input from people, or users situated within the context. The field of user experience research uses iterative model inquiry that seeks to affect change, by establishing requirements, prototyping solutions, evaluating ideas, and interpreting the data collected into insights which are then used to inform subsequent requirements (Rogers et al. 2011).

(7.1) Design Process

Many models of design process exist for a wide range of industries and purposes. One iterative design process model starts with synthesis, moves to evaluation, and transitions to analysis in that order as many times as necessary (Chung et al. 2015). Design researcher Jon Kolko defines synthesis as “an abductive sensemaking process of manipulating, organizing, pruning, and framing data in an effort to produce information and knowledge” (2010 p. 172). This is also where new concepts and ideas are created (Kumar 2012). In UX design, evaluation is used to collect information about users’ or potential users’ ability to learn and use the product or system, as well as their experience when interacting with it (Rogers et al. 2011). This enables designers to make improvements to the design, before it is finalized. During analysis, any data collected, is processed in abstract terms and formed into mental models in order to move toward innovative ideas (Kumar 2012).



*fig 7.1 Synthesized
human-centered design
process (Walters 2015)*

With the descriptions of process above in mind, a similar design process was tailored for this research project and consists of three main modes of inquiry: generation, evaluation, and analysis (fig. 7.1). Generation is concerned with collecting and creating knowledge or ideas in both abstract and concrete forms. This includes collecting data from both secondary and primary methods of research, the synthesis of ideas, and the design and creation of prototypes (e.g., sketches, storyboards, low-fidelity prototypes). Evaluation is then used to determine the merits and failings of ideas that were generated, by testing them with users and potential users. During analysis, the researcher identifies patterns among the data collected, which are used to derive insights that inform subsequent ideas. This model is applied iteratively throughout the research process starting with generation, leading to evaluation, then analysis of data, and feeds back into generation and so on. Although these different modes are often described as discrete phases that lead into one another, for this research they also occur recursively. This process was used to make continuous improvements to the solution.

(7.2) Research Context

As a requirement of conducting both action-based and user experience research appropriately, this research involves three high school English teachers from Warren Central High School, a public school located on the east side of Indianapolis, IN. The Vice Principal of WCHS authorized the participation of the teachers, and provided access to the school environment. Criteria for participant recruitment included current high school teachers working in central Indiana schools. The teachers recruited to participate, as well as the school's registrar, served as the main modes of contact. After initial conversations with teachers and administrators, it was clear that low intrinsic motivation among students is a prevalent and on-going problem throughout the school. This was evident from descriptions of student behavior one teacher stating "most of my job is getting kids to read", and the school-wide initiative to diminish discipline problems by using external rewards to incentivize good behavior described previously.



Warren Central High School

(8) Understanding the Context

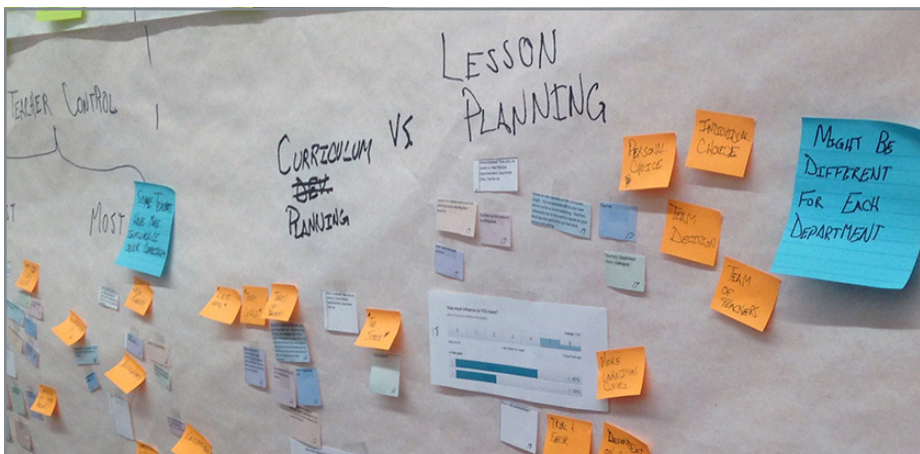
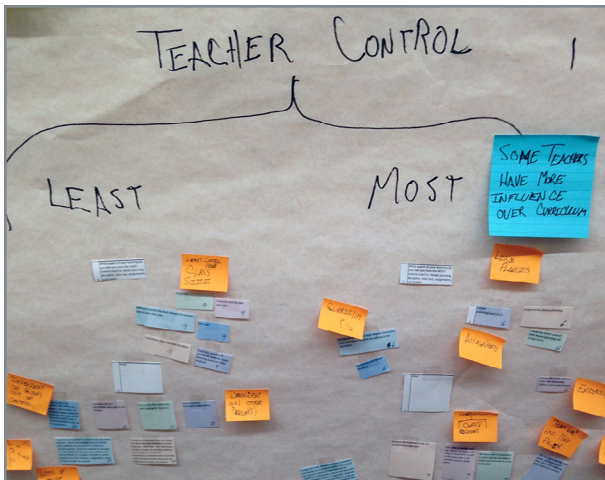
The proposed toolkit for teachers described previously was synthesized based on existing frameworks found in the literature. However at this point in the research, a clear context for the toolkit's integration (e.g., lecture, grading, lesson planning) had yet to be defined. In order ensure the proposed solution is contextually appropriate for the teachers, it was necessary to conduct initial research with teachers to clearly define the context for the toolkit's use. Through the use of surveys, user journey maps, and a heuristic evaluation of existing tools, the proposed toolkit was validated as an appropriate solution and the context of its use was defined by the users/potential users.

(8.1) Surveys

At this point in the research, the participant pool was limited to Indiana high school teachers who currently teach at least one class required for graduation. Responses were solicited from high school teachers of math, history, foreign language, and English. Teachers were asked to respond to the questions with only the classes they taught required for graduation in mind. This was done because it is assumed that students have less intrinsic motivation to participate in classes that are required because they have no autonomy over whether to take it (Ferrer-Caja and Weiss 2002). Furthermore, it helps establish transferability of the research amongst Indiana high schools.

The main purpose of the survey was to establish which classroom responsibilities teachers feel they have the most and least autonomy over. This is because teachers are less prone to internalizing new concepts if they feel their basic needs are inhibited (Assor et al. 2009). A secondary purpose of the survey was to establish other constraints not immediately apparent which would affect research outcomes (e.g., other stakeholders, regulations, procedures that must be accounted for). Teachers were asked which aspect of teaching they feel they have the most and least control over and why they felt that way. They were then asked to rate the amount of control they felt they had on Likert scale from 0-6 with 0 meaning "none at all", 6 meaning "I have final say", and 3 meaning "I can share my views" ("I" meaning the teacher). The survey was created and distributed digitally via a browser-based form service.

Among the six teachers surveyed, all but one described either curriculum development or lesson planning as what they have the most control over and gave them a rating of either 5 or 6. Conversely, all of the teachers mentioned class size as an aspect they have no control over, which could be a possible area for future researchers to address. Although, “curriculum” was mentioned most by participants, lesson planning was determined to be a more fitting context for research because teachers are already familiar with using a tool (i.e., planner) during lesson planning and design requirements can be derived from existing models. With lesson planning established as a context for which to integrate the tool and autonomy supportive behaviors, it was necessary to form a clearer understanding the steps teachers take and what factors inform their lesson planning process.

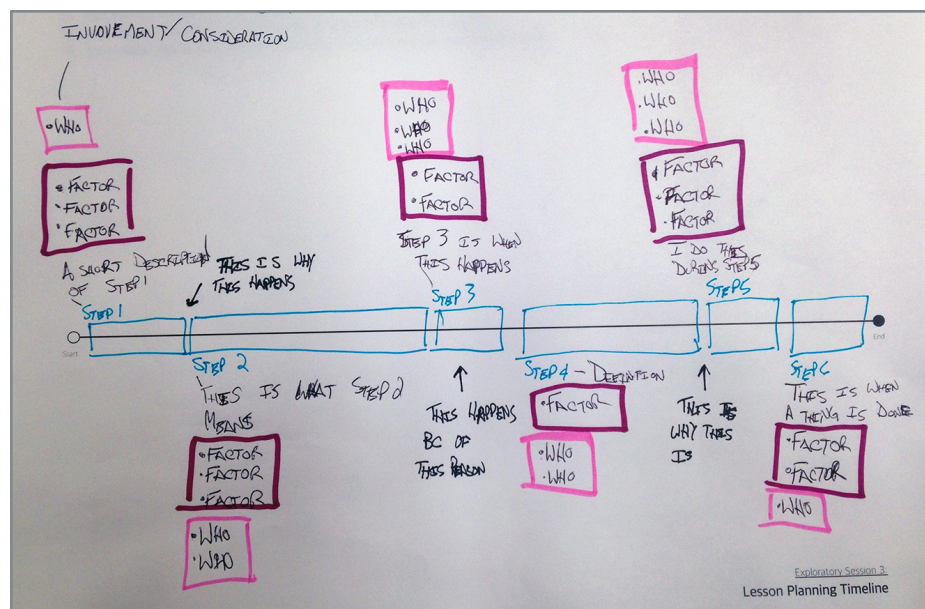


Analysis of survey results

(8.2) User Journey Map

Used to identify specific moments of person's experience that yield a strong emotional response, user journey maps are a visualization of thoughts, actions, and emotions tied to the use of a product or service (Martin and Hanington 2012). The robust qualitative data provided from participants are synthesized into a general lesson planning timeline, used to inform subsequent design decisions. This method included responses from three different Indiana English teachers. The context area was narrowed to include only high school English teachers so as to maintain a certain level of consistency among participant responses. Participants were facilitated through the process of creating a user journey map of their individual lesson planning process. The teachers were each provided with a blank timeline and then guided through a series of tasks to populate the timeline with information directly related to their lesson planning process.

The participants were provided five writing utensils (four different colored markers and one pen), a blank timeline, and a blank sheet of paper. They were asked to write legibly to make analysis of responses easier. Because some the teachers needed to participate remotely, the colors used were up to each participant. Specific colors had no meaning associated with them, and were used merely as a means of differentiating between the information provided from the participants.

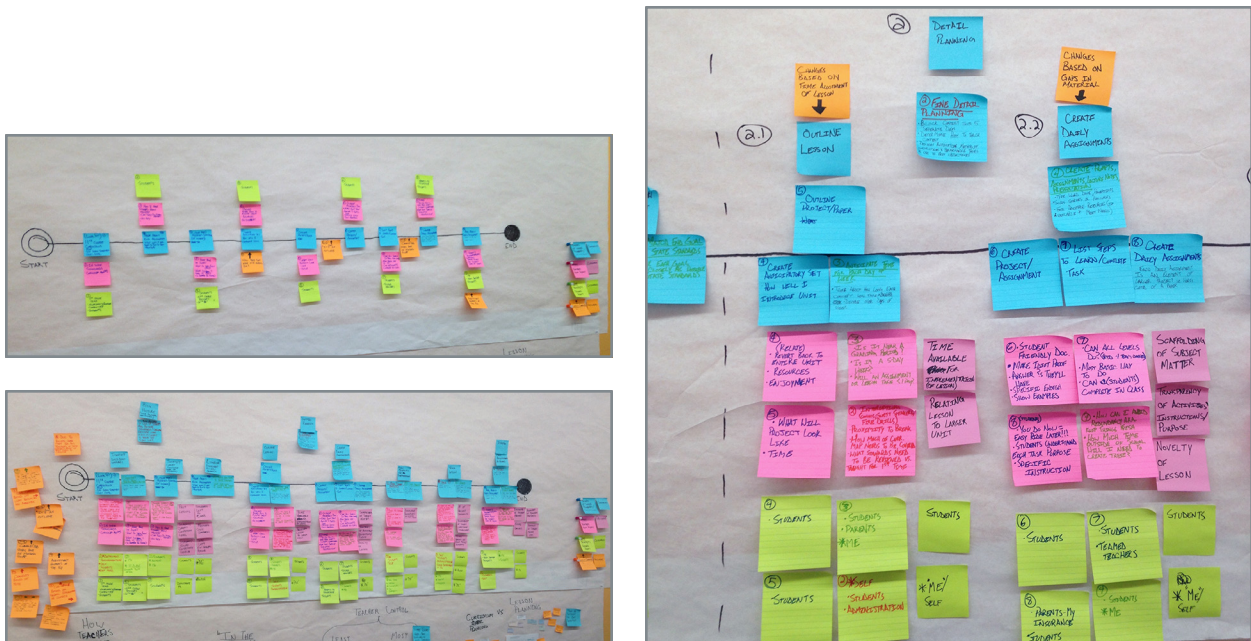


A mock user journey map to show participants if they expressed uncertainty during the session.

Participants were then prompted with the following steps:

- 1) On the blank sheet of paper, list the steps of your lesson planning process using only a few words
- 2) Using your first color, draw boxes on the line provided which represents the relative length of time each step takes. (i.e., if step 3 takes half the time of step 2, it should be roughly half the length).
- 3) Label the phases using the pen
- 4) Use the pen to write a short description/definition of each phase
- 5) Use the pen to list what you think about for each step; draw a box around this information for each step using your second color
- 6) Use the pen to list who you think about in each step; draw a box around this information for each step using your third color
- 7) Use the fourth color to draw arrows at the points of your process that are easiest to alter
- 8) Use the pen to write why those points are easy to alter.
- 9) A mock user journey map was created to show participants as an example if they expressed uncertainty during the session.

A process of affinity diagramming was used to find patterns and derive insights from the data provided. The patterns and insights found were then informed a synthesized user journey map describing a general framework for English teachers' lesson planning process. The resulting framework outlines four major phases:



Affinity Diagram of User Journey Map

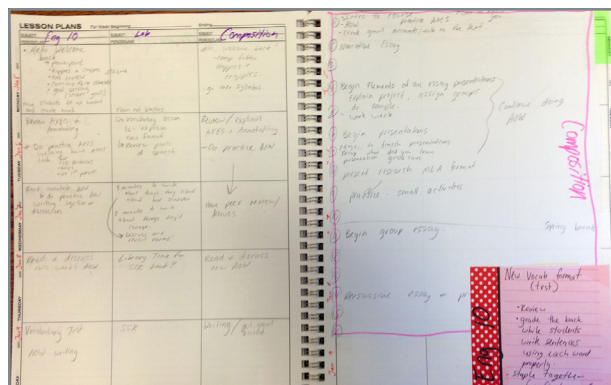
Big Picture Planning– teachers identify state required standards to be taught, identify current ability of students, and establish a method of student assessment
Fine Detail Planning– teachers create an outline of the lesson, and design daily assignments associated with the lesson,
Implementation– teachers make materials to be distributed to student and teach the lesson to students
Reflection– teachers assess the success of the lesson based on student receptions and make adjustments as necessary

Also of note, teachers expressed that they considered their own needs as well as their students' needs in every phase of lesson planning. This validates the suggestion to emphasize the mutual beneficiality (Assor et al. 2009) of autonomy support in the classroom, because teachers are already thinking about how to help students and themselves while planning lessons.

With a general lesson planning process defined on which to base subsequent design decisions, it was necessary to establish more defined requirements for generating prototypes. Initial prototype features were determined through a heuristic evaluation of current lesson planning tools available.

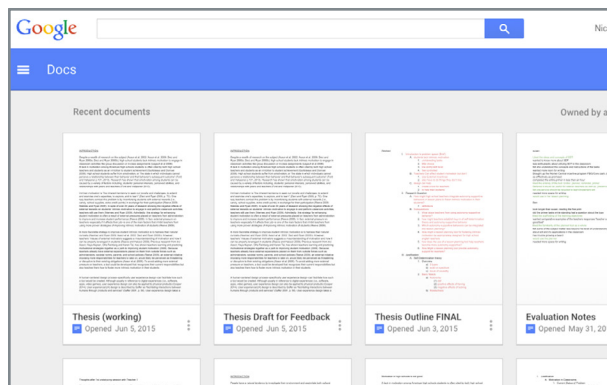
(8.3) Heuristic Evaluation

Heuristic Evaluations are used to identify parts of a product that do and do not conform to established standards or best practices (Buley 2013). This enables the designer to determine which features of a product or service to include or improve. Upon reviewing the literature and the lesson planning user journey maps, eight features were determined for review. The features were determined based on teachers' needs for the tool to feel familiar, and their need to feel uninhibited while performing required tasks associated with lesson planning (e.g., looking up state standards).



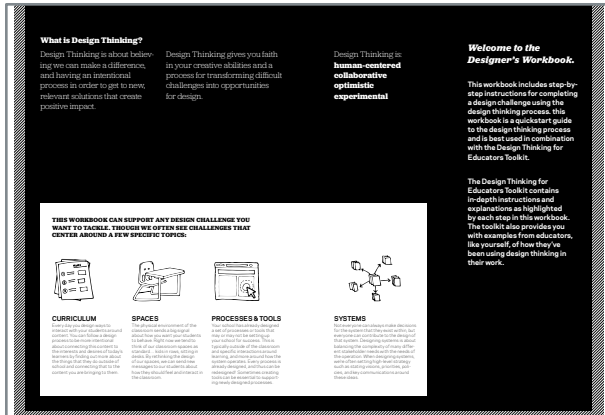
Teacher's Planner

A paper agenda used by an actual high school English teacher to plan lessons.

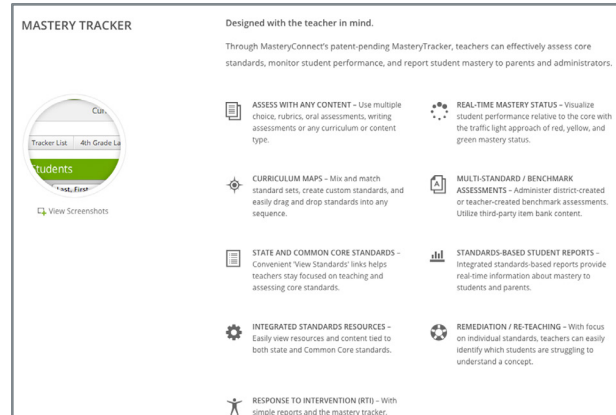


Google Docs

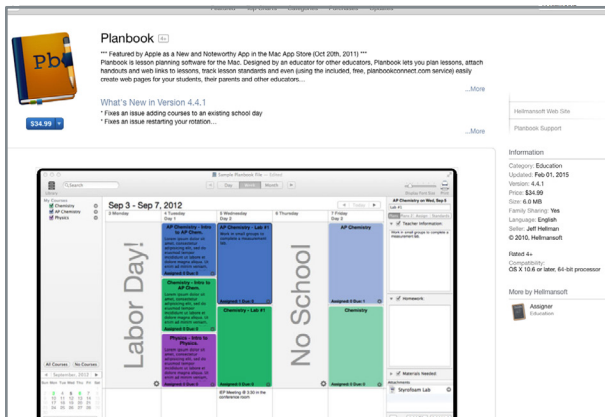
Web-based platform for creating and sharing documentation (i.e., word documents, calendars)



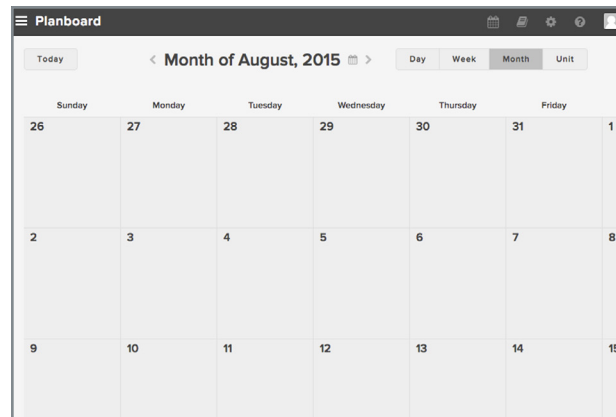
Design Thinking for Educators Workbook from IDEO used to guide educators through the design process



*MasteryConnect Free version
Mobile-based subscription service for creating and managing lesson plans*



*Planbook
Desktop application for creating and managing lesson plans*



*Planboard
Mobile-based subscription service for creating and managing lesson plans*

Features

- 1) Requires little to no training- the product should be in a form that is familiar to teachers
- 2) Can be used for long term planning (i.e., monthly, grading period, academic year)
- 3) Can be use for short term planning (i.e., daily, weekly)
- 4) Can be used in-the-moment planning
- 5) Integrates with existing materials if the tool is supplementary to existing tools
- 6) Enables reflection of lesson
- 7) Readily accessible- does not require preliminary step for use (e.g., login, unlock)
- 8) Does not require additional reference materials for use

A variety of physical as well as digital tools were examined to determine the extent to which these features were exemplified in their respective designs. A four point qualitative scale was used to delineate between gradations of the features that included:

- "No example"- feature was not present,*
"Weak example"- feature is present; has low usability
"Adequate example"- feature is present; moderate usability
"Strong example"- feature is present; optimal usability



**fig 8.1 Results from
Heuristic review
(Walters 2015)**

A cursory review of the tools showed that five of the of the eight features examined were adequately represented across the tools (on average), while the remaining three features were either missing, or not well represented across the tools (fig. 8.1). The features reviewed served as an initial set of design requirements on which to base fledgling prototypes. The adequately represented features were determined to be features that should be modeled, while the remaining features needed to be improved or created.

(8.4) Designing A Solution

In order to explore potential design solutions, it is necessary to create prototypes that can be shared with and evaluated by potential users. This helps designers determine what aspects or features of a design require improvement. Furthermore, the act of making the prototype enables the designer to be reflective of design decisions and is widely considered an important characteristic of the design process (Rogers et al. 2011). Initial prototypes were low-fidelity. For the purposes of this research, low-fidelity refers to the use of materials that are not representative of the final version of the product (Rogers et al. 2011). In this research context, prototypes are made from paper because they are generally easier to produce and modify than the use of other more time consuming methods (i.e., digital production) (Rogers et al. 2009).

Development of the final proposed tool was achieved through four separate iterations of prototype generation. Each prototype session was followed by a round of feedback with potential users. During the first three prototype evaluation sessions, feedback was elicited through a guided conversation centered around users' opinions of the prototypes' function, purpose, and how they would feel if they were to use it in a classroom setting. The feedback collected was then analyzed through a means of affinity diagramming. Design researchers Bella Martin and Bruce Hanington define affinity diagramming as "a process used to externalize and meaningfully cluster observations and insights from research" (2012 p. 12) as means of keeping design decisions grounded in data. Direct comments from participants were written on post-it notes and then sorted based on similarity to one another. From the patterns formed, insights were drawn to inform the design requirements of the tool. After new, or refined requirements were determined, new prototypes including those requirements were then generated for evaluation. Initial prototypes were of the lowest fidelity with subsequent prototypes increasing in fidelity each round.

The fourth and final round of prototypes were created in the same means as the preceding prototypes with requirements derived from analysis of data informing the designs. However, evaluation conducted through means of a usability test with potential users that had not previously seen or discussed the tool or SDT principles with the researcher. Usability tests ask participants to complete a task or set of tasks without being given prior instruction on how to do so (Martin and Hanington 2012). This enables observation of interactions with the prototype that cause negative emotional responses (e.g., frustration, confusion, anger) so they may be changed to elicit more positive emotions (e.g., satisfaction, amusement, joy). After using the final prototype of the tool, participants then responded to a digital survey and interview questions related to their experience using the tool. Final design requirements were then derived and refined as necessary based on the analysis of responses. The following sections describe a more detailed account of the prototypes and their respective evaluations.

(9) Initial Prototypes

At this point in the research, no requirements for the content of the tool (i.e., tasks for teachers, information on SDT) were established. Therefore, initial prototypes contained no viable information on SDT, and were intended to only elicit feedback on teachers' preferences of the tool's form (e.g., planner, poster, mobile app). Five different forms of low-fidelity prototypes were made to give participants more talking points during evaluation that could lead to insights on future design requirements. Each prototype included visual elements to represent the features that were evaluated during the heuristic evaluation rather than functional features.

(9.1) Evaluation

As mentioned above, the first three evaluation sessions were conducted with the same set of participants. Evaluation sessions were conducted individually with Indiana high school English teachers to avoid the possibility of participants influencing each other's responses. Each session lasted 20-30 minutes. Participants were first given a brief explanation of the problem space under investigation (designing a tool to help teachers foster intrinsic motivation in students), and why the prototypes were in the form of hand-drawn sketches. Each prototype was presented to the participant, and its intended use and purpose was explained. Teachers were then asked to share their opinions on which prototype forms they saw were valuable to their workflow and why. Participants were given the opportunity to ask questions about the intention and purpose of the prototypes in question. Data gathered from the participants was then externalized on post-its and analyzed using qualitative coding methods. A qualitative code is usually a word or phrase that figuratively assigns a summative attribute to a portion of language-based or visual data (Saldaña 2012). In vivo coding was used to externalize what participants said verbatim. Pattern codes were then used identify themes amongst the data.

(9.2) Results and Findings

When analysis of the participants' feedback was complete, several findings informed the subsequent round of prototypes. To start, teachers preferred the idea of using a physical tool than a digital one. All three of the teachers were familiar with the "Weekly Planner" and had one of their own, which they shared during the discussion. Because of teachers' familiarity and preference, the "weekly planner" was the form chosen for the tool to model in subsequent prototypes. Furthermore, other helpful tools teachers mentioned during discussion of the prototypes were physical. Only one of the three participants mentioned that they currently use digital means of documenting lesson plans for easier collaboration with a colleague. Although two of the three participants said that they were interested in and willing to use a digital tool (i.e., iOS application), they also expressed that their interest stemmed from their need to fulfill arbitrary requirements imposed by administration. This means that their motivation for using a digital tool was introjected, and therefore would diminish their intrinsic motivation to use the tool and the information it provides.

Another result was that the teachers were all very curious about the specific actions they could take to foster intrinsic motivation in their students, even though none were included in the prototypes. One participant focused almost all feedback on how the basic psychological needs of students could be improved in relation to what is already done in the class. While the other participants also expressed concerns relating to what they would have to do, their comments mostly centered on the form of the prototypes. However, all three participants expressed strong aversions with the idea of increasing student autonomy because they associated it with a chaotic and ineffective learning environment. This led to the insight that teachers may not have enough of an understanding of SDT and its principles to enact autonomy-supportive strategies effectively which validates previous research (Reeve and Halusic 2009). Therefore, the tool would have to include some supplementary information on why the autonomy-supportive strategies included in the tool will lead to heightened intrinsic motivation of students.

Finally, the participants generally saw the tool as something that would only be used to help their students. This finding further supported the need for teachers to be properly informed about SDT with particular emphasis on its mutual benefits to teachers and students. These findings helped establish more functional requirements of the tool for a new round of prototyping.

(9.3) New Requirements

Before a new prototype could be made, specific autonomy-supportive strategies relevant to lesson planning needed to be identified. Because the tool will be used while lesson planning, it is pertinent that the autonomy-supportive behaviors included in the tool are relevant to what teachers currently think about and do during their lesson planning process.

Five autonomy-supportive behaviors previously discussed (nurturing inner motivational resources, intrinsic goal-framing, using non-controlling and informational language, displaying patience, and accepting students' negative comments) were cross-referenced with the user journey maps of teachers' lesson planning processes to determine which autonomy-supportive behaviors to include. Teachers' comments on what they do and think about during each step of the process were examined to discern similarities with autonomy-supportive behaviors.

The cross-examination determined three viable candidates to include in the tool:

- 1) 1) intrinsic goal-framing
- 2) 2) accepting students negative comments
- 3) 3) using noncontrolling and informational language

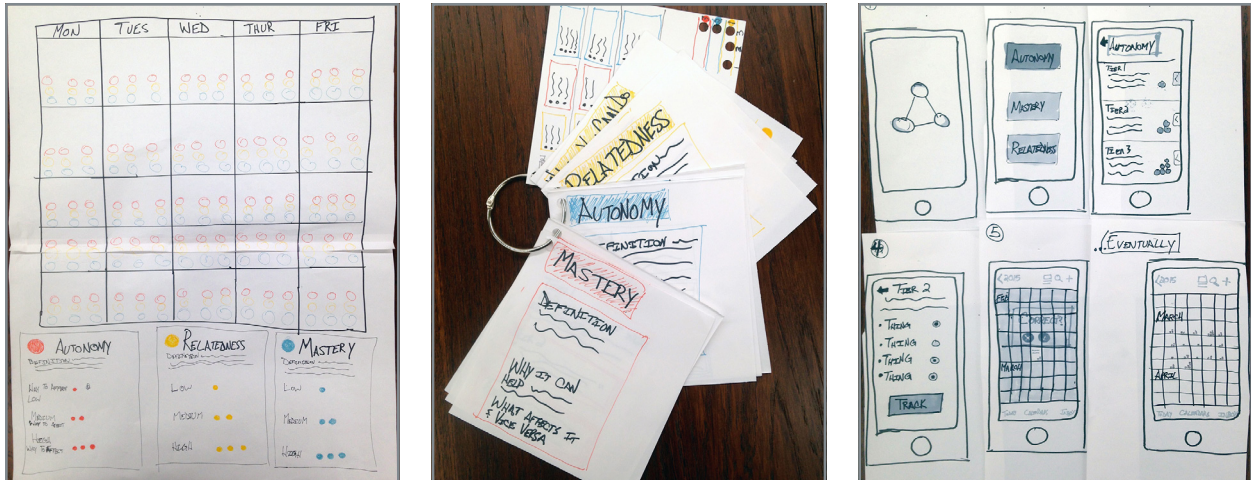
Intrinsic goal-framing was selected because all three teachers mentioned starting their lesson plans with predetermined academic goals mandated by the state. Accepting students' negative comments was selected because all three teachers mentioned student response or reaction to material as consideration. Use of non-controlling and informative language was chosen because all of the teachers mentioned assessment of student performance, while two of the three teachers specifically mentioned providing feedback.

Additionally, because previous research has shown that supporting the basic needs of teachers ultimately helps them to provide autonomy-support and foster intrinsic motivation in students, the tool will also need to include a task that enables teachers to support their own basic needs.

Based on the findings from the first prototype session and the examination of the user journey maps, a set of functional and a set of non-functional design requirements were established. Functional requirements state what a design should do, and non-functional requirements describe the look, feel, and usability of the design (Rogers et al. 2011).



Initial prototypes



Initial prototypes (continued)

Functional

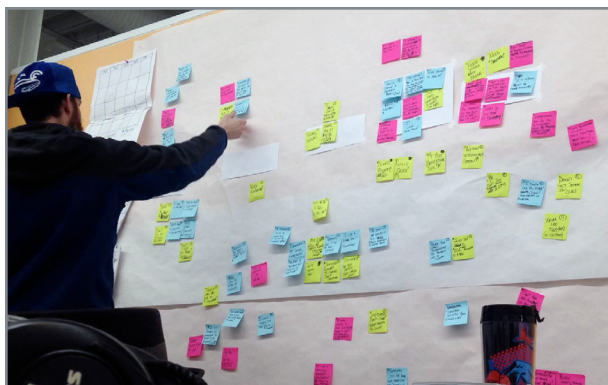
- 1) Requires little to no training- the product should be in a form that is familiar to teachers
- 2) Can be used for long term planning (i.e., monthly, grading period, academic year)
- 3) Can be use for short term planning (i.e., daily, weekly)
- 4) Enables reflection of lesson
- 5) Is readily accessible- does not require preliminary step for use (e.g., login, unlock, internet access)
- 6) Requires no additional reference materials for use
- 7) Enables the practice of intrinsic goal-framing
- 8) Enables practice of using non controlling/informational feedback
- 9) Enables practice of accepting negative feedback from students
- 10) Enables self-guided autonomy-support

Non-Functional

- 1) Modeled after the “weekly planner” form
- 2) Has enough space for writing information
- 3) Has an aesthetic quality reflective of current design trends
- 4) Uses language that is empathetic to teachers

With these updated design requirements in place, new prototypes were created. The lesson planning tool first split into three parts; 1) a primer used to inform teachers about SDT and enable them to become familiar with the autonomy-supportive strategies; 2) a lesson planner for recording the pertinent information related to the lesson. For this and the proceeding round of prototype generation, only design aspects related to the primer were prototyped and evaluated. An existing lesson planner similar to what the participants use, represented the lesson planner portion of the tool during the evaluation to give participants a more holistic model of the tool.

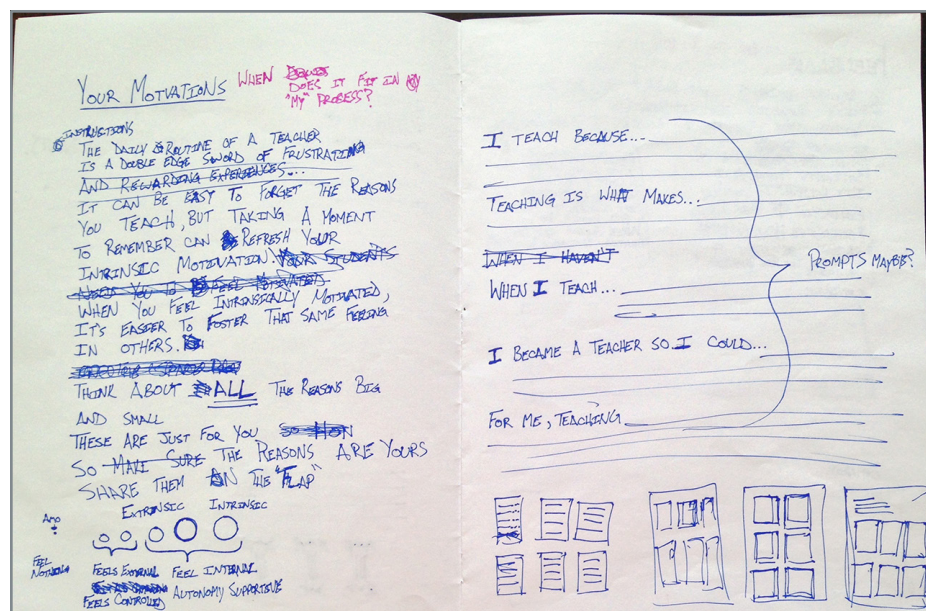
Because the previous prototype evaluation session highlighted a gap in teachers' understanding of intrinsic motivation, it is necessary that the primer contain enough information about SDT for teachers to feel competent to enact the autonomy-supportive strategies. Although the onboarding phase of the proposed toolkit framework would conceivably present information on SDT in greater detail, providing teachers with basic terms and definitions related to SDT principles will enable them to internalize that information. Internalization of SDT and its principles ultimately helps teachers foster intrinsic motivation in students more intentionally (Assor et al. 2009). Information on SDT was limited to what is required to answer the eight "commonly asked questions" about SDT (Reeve and Halusic 2009). This included the different types of motivation, the motivation continuum, the three basic psychological needs, autonomy-support and its merits, and explanations for why the autonomy-supportive strategies provided will help toward fostering intrinsic motivation.



Externalization of data from evaluation

(10) Prototype Session 2

Because the primer document is intended for supplementary use with the lesson planner, the physical dimensions were reflective of lesson planners which are typically 8.5"x11" pages with a portrait layout. Initial hand drawn sketches of the primer document were used to explore design possibilities for document layout and necessary content. Those sketches were then translated to a digital document intended for print to increase the fidelity level of the prototypes and make future iterations of prototypes less time-consuming. Although, this prototype's fidelity is higher than the previous



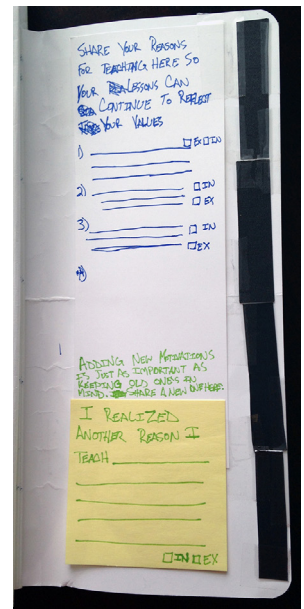
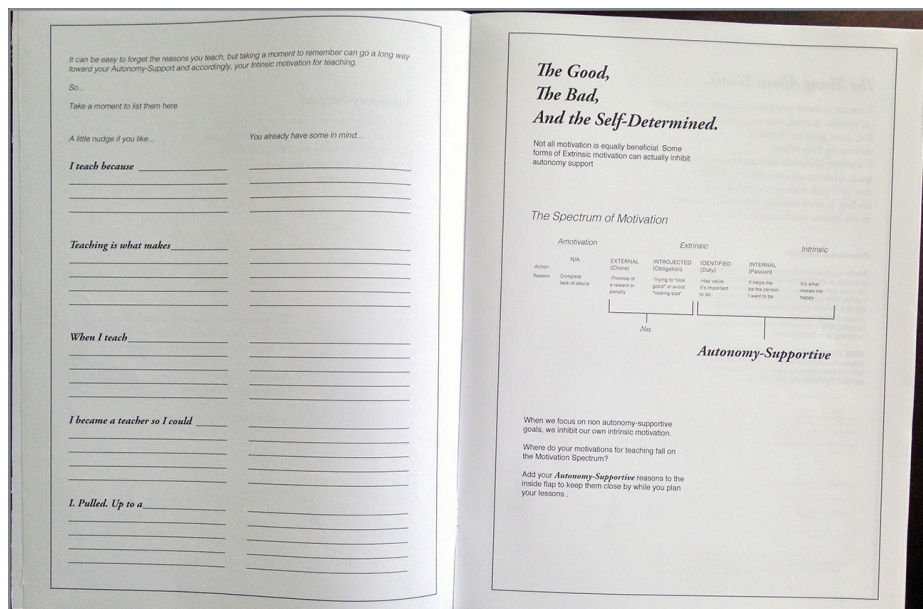
Selected pages from hand-drawn primer

prototypes', it is still considered low-fidelity because it is still not representative of the final product (e.g., grammatical errors, placeholder title). Altogether five activities for practicing autonomy-supportive behaviors were prototyped. A description of those tasks is outlined below.

(10.1) New Features

Recognizing Personal Motivations

In the school reform program reported on by Assor, teachers cited sharing their personal intrinsic motivations with others as a factor that helped them to fully understand SDT and its principles (2009). An adapted form of this activity was created in an attempt to mimic a similar effect. After being presented with introductory information on SDT and the three basic needs (i.e., autonomy, relatedness, competence) teachers were prompted to share their personal motivations for teaching. Teachers were not asked to delineate between intrinsic or extrinsic motivations. The activity gave teachers the opportunity to share motivations by either using sentence starters to prompt their thinking (e.g., "I teach because..."), or creating an unstructured list of reasons they already had in mind. Immediately following the motivation-listing activity, the motivation continuum was presented with heavy emphasis on which types of motivation are autonomy-supportive and which are not autonomy-supportive. Then the primer prompts teachers to appraise their motivations and add the autonomy-supportive motivations to a designated space on the inside of the tool's cover. However, this portion of the

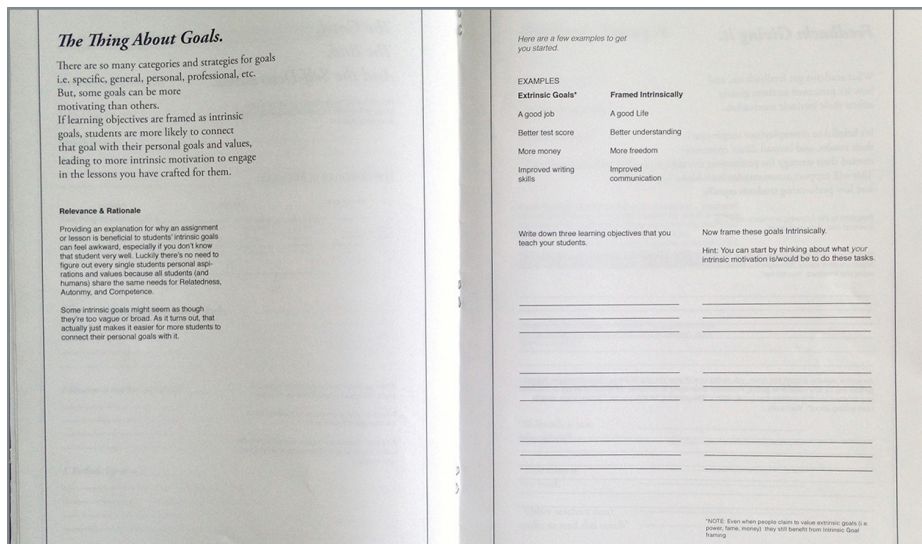


Activity for recognizing personal motivation

prototype was only shown to participants because its fidelity was not high enough to be functional. The designated space for the autonomy-supportive motivations, is on the inside of the tool's enclosure flap, so that it is always visible to teachers when the tool is in use. In this way, the tool is intended to serve as a reminder of their autonomy-supportive, or intrinsic, motivations to help them recognize the value of autonomy-supportive behavior. This would provoke internalization and implementation of autonomy-supportive behavior in the class, which would foster intrinsic motivation in students.

Intrinsic Goal-Framing

Mentioned earlier, intrinsic goal-framing is a specific strategy to provide explanatory rationales for doing something or pursuing a goal (Vansteenkiste et al. 2009). Instead of presenting students with pragmatic or external reasons for engagement in learning activities (e.g., “you’ll get better”, “it will help you get a job”), intrinsic goals are presented that align with the assigned task. For example, if students are supposed to practice writing an argumentative essay, teachers could frame the goal intrinsically by connecting the ability to present a formal argument to the propensity for communicating information that is valuable to one’s self and others. The activity has teachers practice intrinsic goal-framing by first identifying a learning objective they actually teach their students, and writing it down. Then teachers are asked to create an intrinsic goal for the learning objective (pic). To help teacher construct intrinsic goals, they are given examples of extrinsic goals that have been framed intrinsically. As a starting point, teachers are advised to think about their personal intrinsic motivation would be for pursuing the learning objective.



Intrinsic Goal-Framing activity

Giving Students Feedback

For practicing the use of non-controlling and informational language, teachers were given scenarios that asked them to provide feedback to hypothetical students in a familiar context (i.e., English assignments). The description of the activity advises teachers to avoid emphasizing the fictional students' ability level, and instead asks them to focus on providing strategies for achieving or pursuing the goal. The teachers were asked to respond to the scenarios as if they had involved their students.

Accepting Student Feedback

To help teachers accept negative comments from students, an activity was designed similar to the one for giving feedback. Teachers were given examples of negative comments students might say in response to a given learning activity (e.g., "this essay is too hard"). The activity advised teachers not to be dismissive of negative comments because it would frustrate students' autonomy-support, and an example of a dismissive response was provided. The teachers were then prompted to respond to the negative comment in an accepting and empathetic manner. However, an example an accepting response was not provided to avoid biasing teachers' responses.

Feedback: Giving it.

What students get feedback on, and how it's presented to them greatly affects their intrinsic motivation.

It's helpful to downplay (not sugar-coat) their results, and instead direct comments toward their strategy for performing the task. This will support autonomy for both high and low performing students equally.

Respond to the following scenarios as if they involved one of your students

One of your higher performing students brings you the thesis statement she's been working on for her argumentative essay. Although the thesis statement is well written, it doesn't quite establish the argument she intended. You tell her...

As you're walking around the room, you notice one of your favorite students--although not the highest performing by any means--is getting frustrated while trying to complete his reflective essay on the book start writing about. You're on...

Feedback: Taking it.

"This is boring."

"It's just busy work."

"That's too hard"

"Other teachers don't make us do this"

—Students of all races and nationalities

Students can seemingly have an endless supply of... "feedback". By acknowledging, accepting, and empathizing with their feelings, you support their autonomy by letting them know that their voices have been heard and you are an advocate for them. On the other hand being dismissive of negative comments ("Quit complaining and do your work") can frustrate autonomy support and make students feel as though their views are unvalued.

Respond to the following complaints. Try to acknowledge and empathize with the sentiment and the student rather than reacting to it

"Shakespeare is boring." _____

"Bellwork is just busy work." _____

"This essay is too hard." _____

Activities for giving and accepting feedback to and from students.

Combined Activity

The final activity is a combination of the four preceding activities to help teachers understand how the activities relate to each other, as well as the overall lesson planning process. This activity advises teachers to reference a recent lesson plan they already made, to give them a clear context for responding to the prompts that were given. The activity starts by prompting teachers to provide a learning objective for lesson, and then framing it intrinsically. The next prompt asks teachers how they would respond to a student who is struggling with the lesson to help them think about how they give feedback to students. Then, they were asked to share what they would say to a student who complains about the lesson plan to help them think about how to accept negative comments from students. Finally, teachers were asked to share an intrinsic motivation they have to teach that particular lesson. This step was done to help teachers form intrinsic goal-frames for themselves, which would support their own basic psychological needs (i.e., relatedness, autonomy, competence).

A New Plan.

Now that you've had a chance to get your bearings with The New Plan, it's time to put it all together. Grab a lesson plan you've made recently and try "replanning" it with the autonomy-supportive practices in mind.

Frame the Learning Objective as an Intrinsic Goal

Learning Objective _____

What would you say (or would have said) to the struggling student to support their autonomy?

What would you say to the student that complains to make them feel their voice is heard?

What is YOUR intrinsic motivation for teaching this particular lesson?

Activity for reviewing autonomy-supportive strategies

(10.2) Evaluation

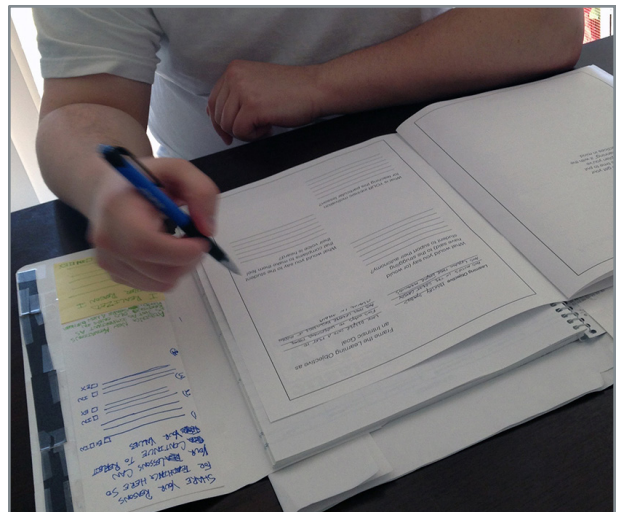
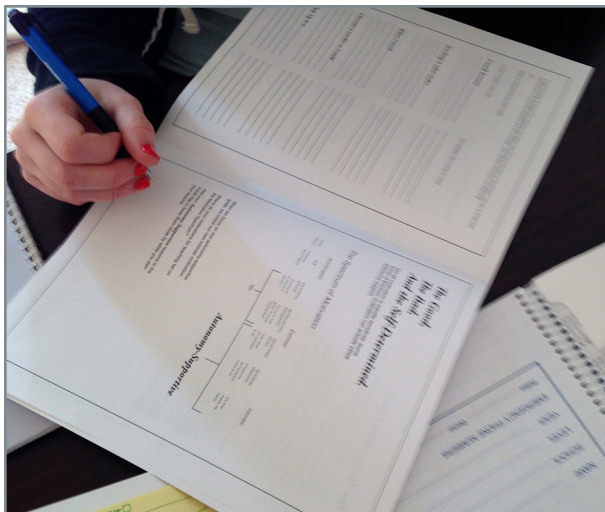
During this session of prototype evaluation, feedback from only two participants was collected due to limited time. Participants were told that the lesson planner prototype was acting as a place holder to help them create a more holistic mental model of the final tool. The teachers were given a brief walkthrough of the information and activities in the primer (including the enclosure flap) and then asked to read through the primer and attempt to complete the activities to the best of their ability. Participants were allowed to ask questions at any point during the session. Participants were also asked questions about each of the five activities included in the primer as well as the planning tool overall. Questions about the activities were posed to participants after each activity was completed, while questions in reference to the tool as a whole were asked after all activities were attempted. The questions asked after each activity were:

- 1) What is your general reaction to this activity? Why?
- 2) What about this activity was confusing or needed more explanation? Why?
- 3) Were there any aspects of this activity that you found especially useful? Why?

The questions asked about the tool as a whole were:

- 1) What overall value do you see in this tool?
- 2) Would you use this tool during your lesson planning? Why/why not?
- 3) Is there anything about the layout or visual design of the pages that could improve?
- 4) What is your reaction to the overall voice or language used throughout the tool?

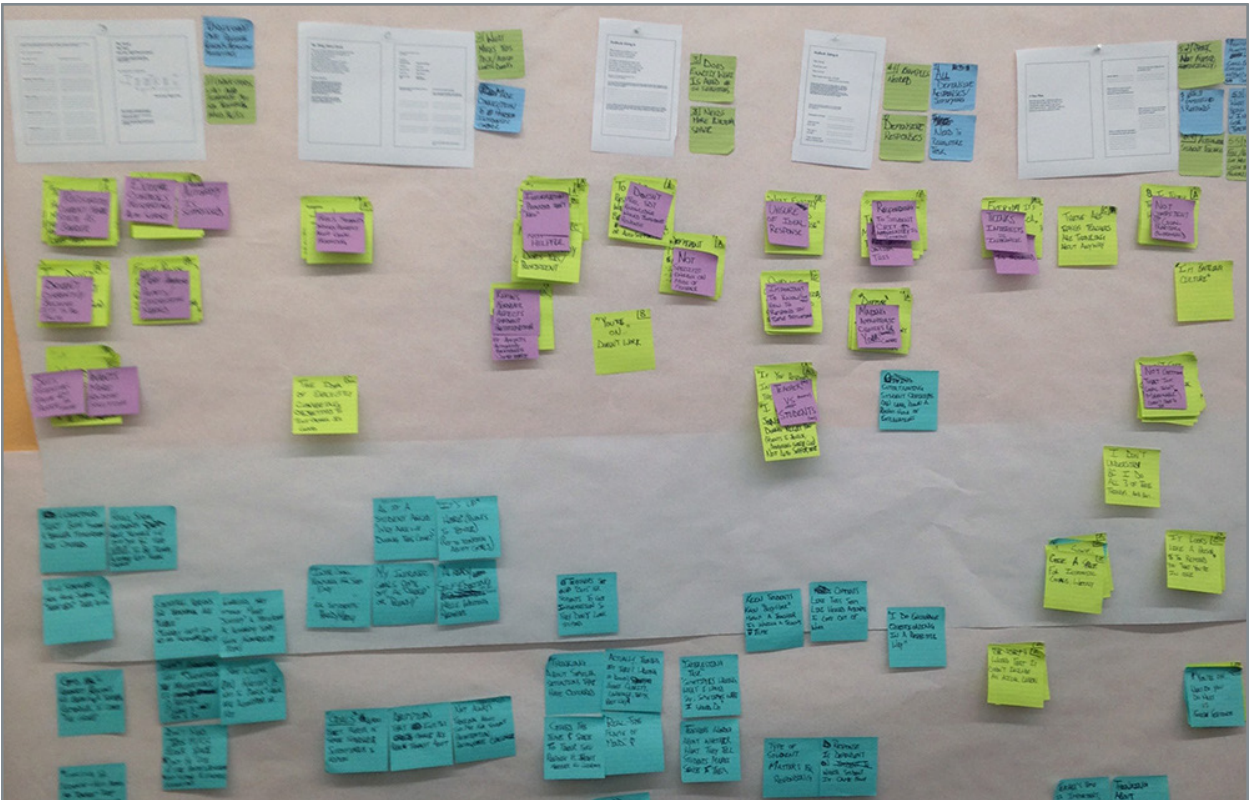
Responses to questions were included in the analysis to determine design changes.



Evaluation with participants

(10.3) Findings and Results

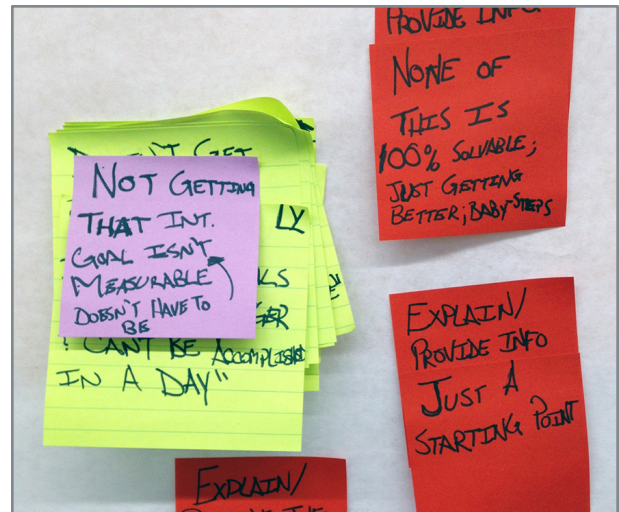
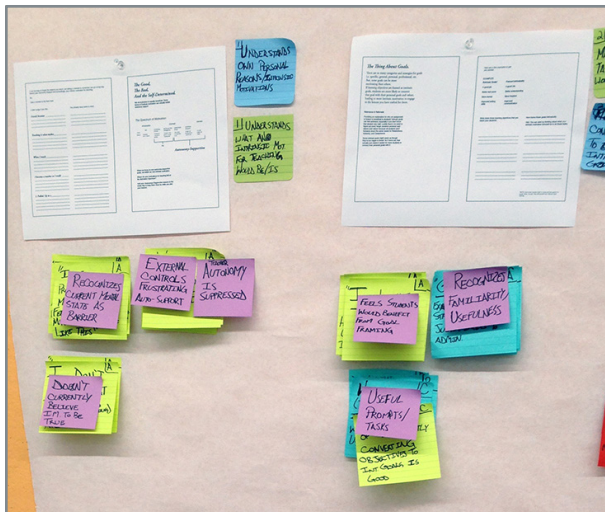
Although findings suggested a plethora of changes could be made to the prototype, not all of those changes were implemented in the subsequent prototype due to time constraints. As such, only the findings which led directly to changes in the upcoming round of prototyping will be discussed. Analysis of teachers' responses to both the activity prompts and the questions about the activities, yielded three major findings: teachers needed more supplementary information about SDT and its principles; the activities for recognizing motivation and accepting negative feedback from students needed to be restructured; and the overall tone of language was inconsistent. A more detailed account of the problems with these aspects of the tool follows.



Affinity diagram of feedback from participants

Supplementary Information

The information provided in this prototype was successful in evoking the importance of intrinsic motivation of students, and that what teachers do in the classroom could affect students' intrinsic motivation. However, teachers were unable to see the connection between supporting the basic needs, the activities presented in the tool, and how engaging in those activities would lead to higher intrinsic motivation in their students. Throughout the evaluation session, participants would express that they agreed that helping students have more intrinsic motivation was valuable, but they did not see how using the activities in the primer would lead to their students having more intrinsic motivation. In other words, they did not understand that supporting autonomy, relatedness, and competence in students, would help students internalize the more external and controlling forms of motivation. Furthermore, the teachers had difficulty discerning between the different types of motivation and what it is they do that exemplifies each type. Teachers also had difficulty recognizing how the activities in the primer were different or more effective in providing autonomy-support from what they do currently. They made comments like: "I don't understand because I do all three of these things" (in reference to providing support for the basic needs without seeing positive results) or "I do encourage questioning in a respectful way" (referring to accepting negative comments from students). Because of these issues, the next iteration of the tool would need to provide information on the internalization process, including how it works and its relevance to the activities in the primer. They would also need more detailed information on the different types of motivation along the spectrum, leading to changes in the activity for recognizing motivation.

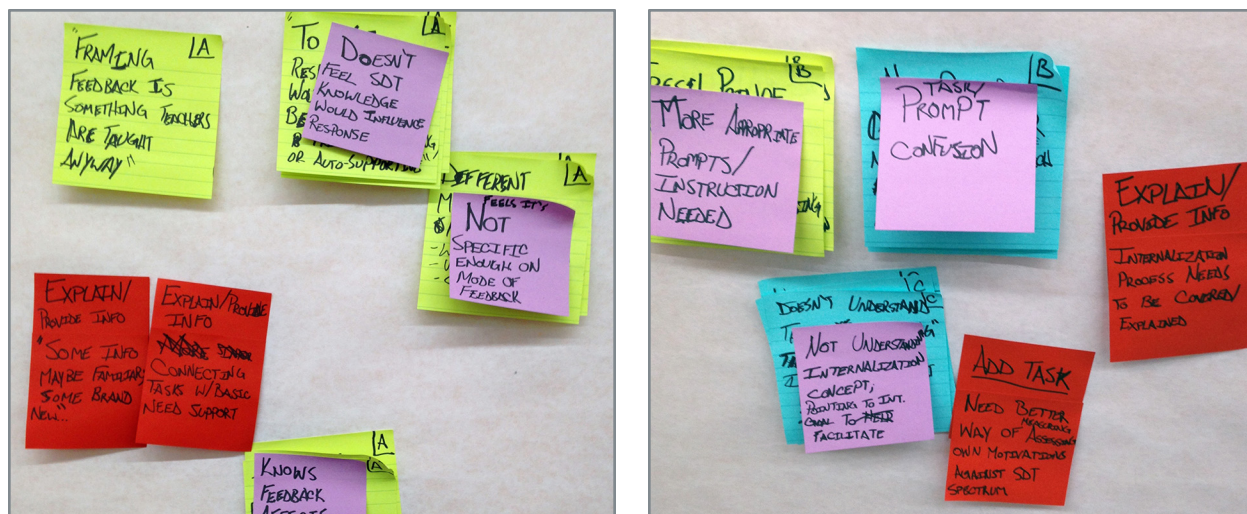


Insights showing teachers needed more information to gain a comprehensive understanding of STD

Restructuring Activities

Although teachers had no trouble accurately identifying or expressing their personal intrinsic motivations for teaching, they did not recognize that there are tasks they do as a teacher that are not intrinsically motivated. This gap in understanding was also believed to inhibit participants' understanding of the internalization process. These findings suggested that more explicit information be given on the different types of motivation, including but not limited to definitions, examples, and their relation to one another. This led to redesigning the activity for recognizing motivation, by having teachers explicitly identify something they do as a teacher for each of the types of motivation.

The activity for accepting negative feedback from students had several issues as well. First of all, the participants expressed that handling negative comments from students properly is essential in maintaining an orderly classroom dynamic. However, the teachers had strong aversions to accepting and encouraging criticism from students, because it would cause the class to "spiral out of control" or "cause tensions to rise" between the students and the teacher. Despite being warned of the negative effects on students' autonomy-support, teachers' responses to the prompts were dismissive or defensive in nature, suggesting that they were attempting to counter-argue the student's comment because it was viewed as malicious. Furthermore, the teachers also expressed that the comments they were prompted to respond to lacked contextual information that might have lead them to respond differently (i.e., what type of student made the comment). Because of these issues, the activity for accepting students' negative feedback needed to have more contextually specific prompts for response and a stronger emphasis on avoiding comments that are defensive or dismissive in nature.



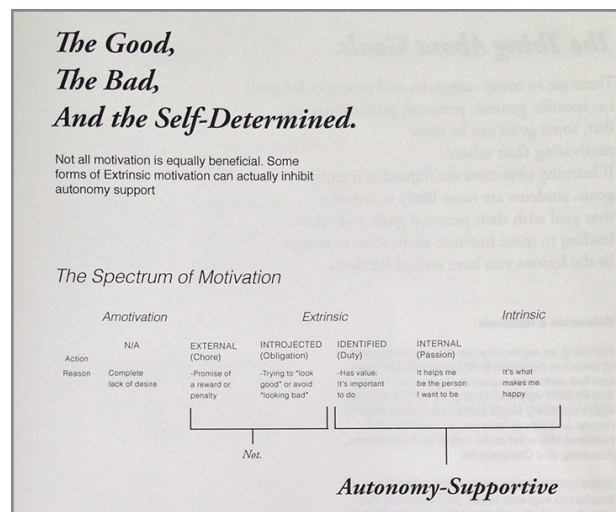
Insights showing more contextually specific prompts were needed for some of the activities

Overall Tone

One of the main purposes of the tool is to provide teachers with information in an autonomy-supportive way. Therefore it was important that the language used throughout the primer felt relatable to teachers (i.e., as if it had been written by other teachers). This made it important for teachers' opinions to drive the overall tone of voice for the tool. This version of the prototype intentionally used a mix of formal and informal language in an attempt to elicit a preference on which was more relatable during discussion. Examples of formal language could be seen more prominently in terms and definitions from the established literature (e.g., "relatedness", "intrinsic motivation", "autonomy-support"), while examples of informal language were more prominent in section headings and activity prompts (e.g., "The Good, The Bad, and The Self-Determined"). Incidentally, the descriptions of activities used a mix of informal and formal language. Not surprisingly, teachers did not care for the wildly disparate choice of language used, and expressed a strong preference for informal language with one participant describing it as "real people language" and another participant stating it gives the primer "a little flavor". On the other hand, they did not want the information to be presented with such informality, that it diminished the importance or validity of the concepts presented in the tool. These issues lead to making the overall language in the tool more informal than formal.



Insights showing participants favored more "real people" or informal language



Example of informal language used

(11) *Prototype Session 3*

The issues ascertained through the analysis of teachers' comments necessitated additional and amended design requirements for the tool. These were added to the previous list and shown in bold below.

Functional

- 1) Requires little to no training- the product should be in a form that is familiar to teachers
- 2) Can be used for long term planning (i.e., monthly, grading period, academic year)
- 3) Can be use for short term planning (i.e., daily, weekly)
- 4) Enables reflection of lesson
- 5) Is readily accessible- does not require preliminary step for use (e.g., login, unlock, internet access)
- 6) Requires no additional reference materials for use
- 7) Enables the practice of intrinsic goal-framing
- 8) Enables practice of using non controlling/informational feedback
- 9) Enables practice of accepting negative feedback from students
- 10) Enables self-guided autonomy-support
- 11) **Enables identification of the four types of extrinsic motivation and intrinsic motivation**

Non-Functional

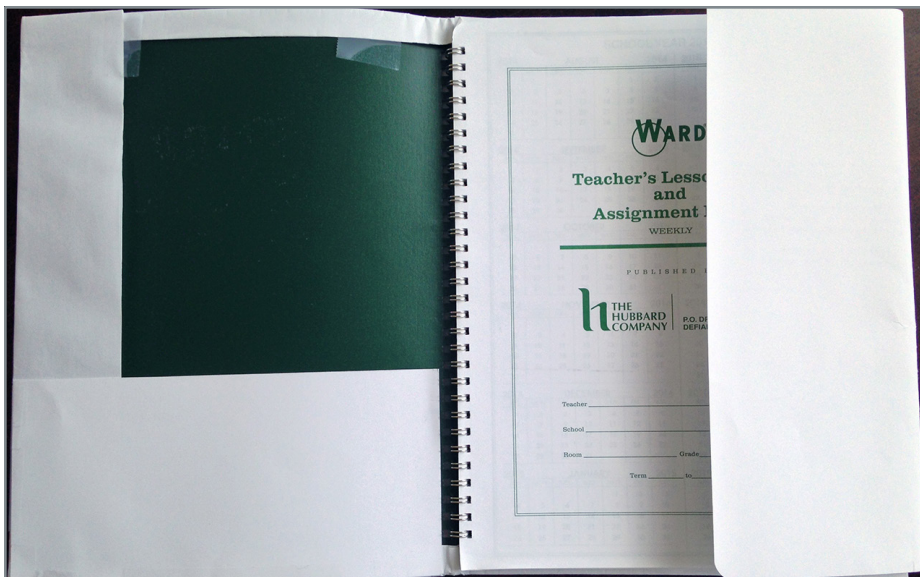
- 1) Modeled after the “weekly planner” form
- 2) Has enough space for writing information; **not too much**
- 3) Has an aesthetic quality reflective of current design trends
- 4) Uses **informal** language that is empathetic to teachers

(11.1) Changes Made to Features

This version of the prototype also used an existing lesson planner as a placeholder to give teachers a more complete model of the tool. Similarly to the discussion of the previous analysis phase, only the changed aspects of the prototype will be discussed.

Supplementary Information

As mentioned in the findings from the previous prototype's evaluation session, not all the issues that were brought to light were changed for this prototype. Changes were omitted for two reasons: 1) a narrow window of time between evaluations with participants; 2) the addition of supplementary information to the primer might alleviate—in part or whole—the issues not addressed directly in this iteration of the prototype. The supplementary information added centered around the purpose of autonomy-support with an emphasis on internalization and controlling vs. autonomy-supportive behavior. In the introductory pages of the primer, teachers were given information on the validity of autonomy-support, as well as a cursory review of the autonomy-supportive behaviors that are addressed.

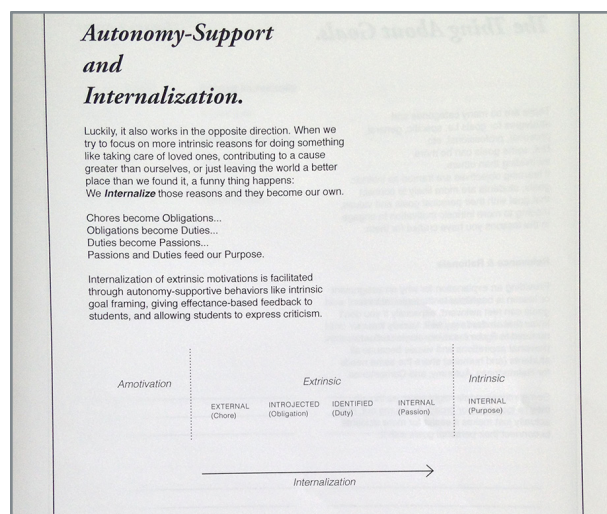
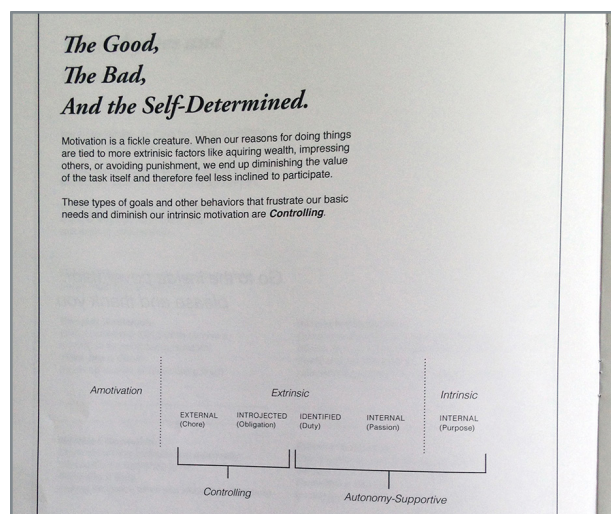


An existing lesson planner was used as a placeholder

Although, the motivation spectrum was included in the previous prototype, two more detailed versions accompanied by explanations of the visualization were provided. The first visual shows which types of motivation are felt as autonomy-supportive and which are felt as controlling. The explanation accompanying this visual model provides a basic description of what “controlling” means in the context of SDT. The second visual model of the motivation continuum is used to show how autonomy-support can cause external motivations to become more internal. Both of these models also used more colloquial terms for describing the different types of extrinsic motivation and intrinsic motivation which are introduced in the redesigned activity for recognizing motivation. Finally, the three activities for autonomy support (intrinsic goal-framing, accepting student feedback, and giving student feedback) were all labeled with which basic need they support.

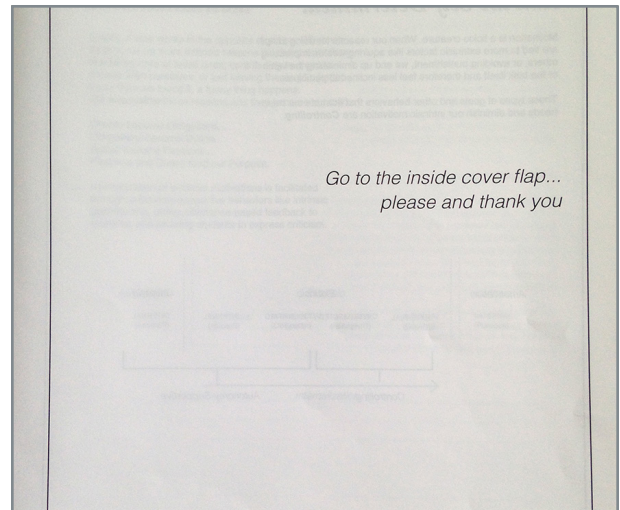
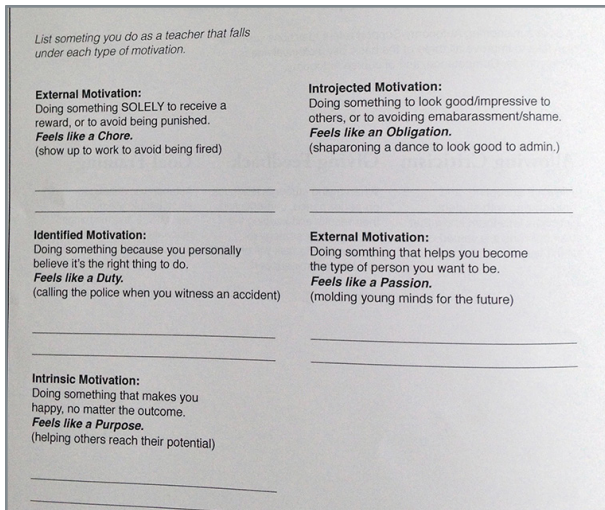
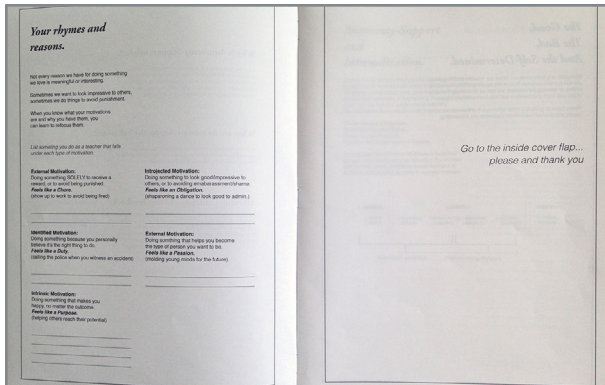
Recognizing Personal Motivations

This activity needed to be completely redesigned to help teachers both understand the differences between all types of motivation, and discern which of their personal motivations belong to each type. The previous prototype asked teachers to share their personal intrinsic motivations for teaching and gave them the option to list them freely or use sentence-starters if they had trouble thinking of some. In a similar fashion, this iteration asks teachers to share something they do as a teacher that fits into each of the four types of extrinsic motivation, as well as intrinsic motivation. This is done to show teachers explicitly that goals and activities that are directly related to each, do not always have the same motivations driving. This would simultaneously highlight and fill the gaps in knowledge they have pertaining to the different types of motivation as defined by SDT.



Additional information on SDT principles

The activity first introduces a brief explanation of different sources of motivation and why identifying them might be valuable. Then it instructs teachers to list something they do related to teaching that is congruent with each type of motivation. Because amotivation is the lack of both internal and external incentive, only the four types of extrinsic motivation (external, introjected, identified, internal), and intrinsic motivation were presented. Each of the types of motivation included the term, an informal definition, a colloquial term for what that type of motivation typically feels like, and an example of a task or goal that fits. The colloquial terms used were: chore (external), obligation (introjected), duty (identified), passion (internal), and purpose (intrinsic). These were given to help teachers recognize which aspects of their job are associated with



Restructured activity for recognizing motivation

each type of motivation with less difficulty. The colloquial terms were also given to make the information on SDT more relatable, and less intellectually intimidating. This would enhance teachers’ feelings of relatedness and competence leading to improved internalization of SDT and its principles. Each type of motivation also included a space directly underneath for teachers to write their response.

This activity then explicitly directs teachers to look at the inside cover of the enclosure flap, where they are instructed to list their personal intrinsic motivations for teaching. This portion of the activity has a space for teachers to list intrinsic motivations that can always be seen while the tool is open and in use, and a space for sharing intrinsic motivations that they may think of in the future. The space for future motivations would be a pad of tear-away notes to encourage continuous reflection of possible intrinsic motivation.

Accepting Student Feedback

This activity was restructured to be more reflective of the activity for giving feedback to students in an effort to make the activities feel more consistent. The previous version of the activity had four negative comments from “students” for teachers to respond. This iteration of the prototype has only two negative comments from students that include contextual information about the student from which the comment came. The prompts include a personality trait (e.g., apathy) and a details about the hypothetical student’s average academic performance level. Instructions for this activity were rewritten as well, to emphasize acknowledgement of the student’s feelings and avoidance of a dismissive attitude.

Feedback: Taking it.

Students can seemingly give an endless supply of... "feedback". By acknowledging, accepting, and empathizing with their feelings, you support their autonomy by letting them know that their voice has been heard and you are an advocate for them.

On the other hand, being dismissive or defensive over negative comments ("Quit complaining and do your work") can frustrate autonomy support and make students feel as though their views are unvalued and cause tensions to rise.

Diffuse the following complaints. Try to acknowledge their sentiment without being dismissive of their feelings

"I already saw the movie, so reading the book feels like a waste of time", said one of your highest performing and most apathetic students.

"This is the same assignment as yesterday", moaned one of your under-performing, but most hard-working students.

Supports: Relatedness

Write the following responses to:

"This is boring."

"It's just busy work."

"That's too hard."

"Other teachers don't make us do this."
-Students everywhere

Write your response to:

Restructured activity for accepting feedback from students

Overall Tone

Changes in the language used were made throughout the primer to create a more consistent informal voice for the tool. This change was done to make the tool more approachable to teachers, which according to Assor, will help them internalize the concepts provided (2009). The majority of the areas that were deemed more inconsistent were also the areas that already needed to be changed for other reasons such as the introductory information on STD, and the restructured activities. Additionally, smaller issues caught by participants, like spelling and grammar errors, were also corrected.

(11.2) Evaluation (Round 3)

With a new prototype of the tool created, another evaluation session with English teachers was necessary to determine improvements to include in the final prototype. This evaluation session was structured in the same manner as the evaluation session for the previous prototype. Participants were shown the tool in its entirety and given a brief description of its purpose. Then the teachers were instructed to complete the activities in the primer to the best of their ability, and they answered follow-up questions regarding each activity as well as the tool overall. The responses to the questions and the responses in the primer were then externalized and affinity diagrammed to determine which aspects of the tool needed to be improved for the next iteration of the prototype.

<p>What is Intrinsic Motivation?</p> <p>Intrinsic motivation is what drives people to intentionally engage in activities of their choosing. Intrinsic motivation causes people to explore the world around them, seek new knowledge, and establish meaningful relationships.</p>			<p>Why is Autonomy-Support helpful?</p> <p>Over the past 30 years, a excess of research on intrinsic motivation in the classroom has proven autonomy-supportive teachers have students with higher intrinsic motivation, which leads to increased student performance, fewer behavioral issues, and greater overall well-being.</p>		
<p>What is Intrinsic Motivation made of?</p> <p>Our intrinsic motivation is determined by three basic psychological needs: relatedness, competence and autonomy. These needs can be met and fostered through autonomy-supportive behavior.</p>			<p>What are Autonomy-Supportive behaviors?</p> <p>A bit of a misnomer, Autonomy-Support refers to actions someone can take to improve all three of the basic psychological needs: Relatedness, Competence, and of course Autonomy.</p>		
<p>Relatedness</p> <p>People need to feel a sense of belonging in order to experience relatedness. Feelings of relatedness can be fostered through the development of empathetic, caring, and respectful relationships.</p>	<p>Competence</p> <p>When people think they're good at something, they feel competence in their ability to perform. Feelings of competence are improved by providing an optimal challenge and giving feedback on the process someone used to complete the task.</p>	<p>Autonomy</p> <p>People feel autonomous when they view their decisions to act as voluntary. They also need to believe that they had a choice of whether or not to act and in what way. Autonomy is enhanced when people are provided with choice and meaningful rationale to take action.</p>	<p>Allowing Criticism</p> <p>Allowing, accepting, and empathizing with student criticisms let's them know that their opinions are valued or at the very least tolerated.</p>	<p>Giving Feedback</p> <p>When giving students feedback on performance, underplaying their results and keeping the focus on their strategy for completing the task will provide more autonomy-support.</p>	<p>Goal-Framing</p> <p>Autonomy is enhanced when people are provided with choice and meaningful rationale to take action.</p>

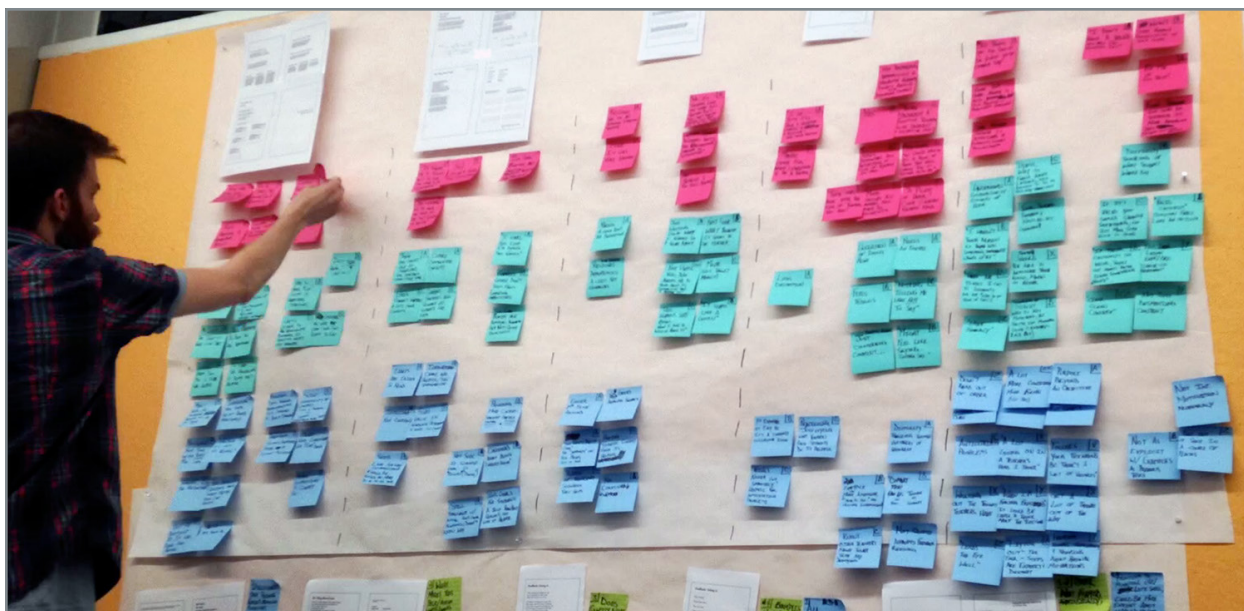
Information written with more consistant informal language

(11.3) Findings and Results

Similarly to the previous discussion of analysis results, only the findings that led to changes in the subsequent prototype will be described. This round of analysis yielded four major issues: inconsistency of fidelity, lack of example responses, clarity of instructions, and scaffolding of activities. A more detailed description of the specific problems teachers had in these areas is shared in the sections below.

Inconsistency of Fidelity

The inconsistent fidelity refers to the varied fidelity levels between the primer, the lesson planner, and the cover. That also includes fidelity inconsistency within each part of the tool (e.g., inconsistent layout treatment). However, the most confusion arose from the disparate levels of fidelity between the primer and the cover, and between the primer and the lesson planner. The teachers became confused when the primer directed them to “go to the inside cover flap” in part because they did not realize the instructions were referring to the folded paper used to cover the lesson planner. In other words, teachers thought the folded paper was representative of a cover. This was a sign that the fidelity level of the cover was too low and needed to be increased to match the level of the primer. Inconsistency of fidelity between the primer and the lesson planner caused confusion for participants when they had finished the activities because they



Affinity diagram of data gathered from evaluation session

believed either the format of activities in the primer would be the exact same in the lesson planner, or they believed the primer was the lesson planner. For instance, when asked whether they would use the tool for planning their lessons, teachers said no because it “takes too many steps for planning” or it was “not realistic to do it this way for every lesson.” This confusion could have also been because teachers were not being asked to create entire lesson plans—which would require use of the lesson planner—and therefore, were not aware the lesson planner and the primer were two separate parts of the tool. However, two of the teachers asked where they would record the information in the lesson planner accompanying the prototype, which had no such designated space because it was a finished product in itself. This line of questioning pointed to the fidelity level of the lesson planner being too high compared to the primer. These issues led to changes intended to improve consistency in fidelity for these issues specifically, and across the entirety of the tool.

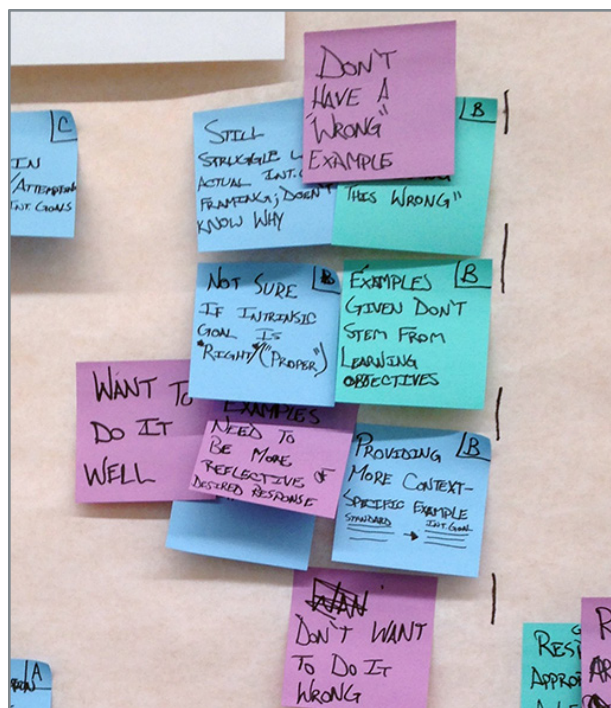


Inconsistent fidelity between the primer, binder, and planner caused confusion

Lack of Example Responses

During the evaluation session, it quickly became clear that a provision of example responses would need to be included in the next iteration of the prototype. After the completing the intrinsic goal-framing activity, participants said they had some confusion because they were “not sure if (the) intrinsic goal is right” and the “examples given don’t stem from learning objectives.” However, they did still express that they valued the examples that were given, and wanted them to remain in the document. This highlighted a low level of competence for this activity.

Conversely, after teachers completed the activity for giving students feedback, two of the three participants said the activity was “not useful” because they believed giving autonomy-supportive feedback to students is something they “already do”. One participant pointed out the activity is “not asking me to think about it (giving feedback to students) any differently than I already do.” Upon reviewing the participants’ responses in the activity, none of their responses were considered to be autonomy-supportive. Participants’ high level of competence in their ability to provide autonomy-supportive feedback, illustrated a need for teachers to be shown examples of inappropriate (i.e., not autonomy-supportive) responses to this activity.

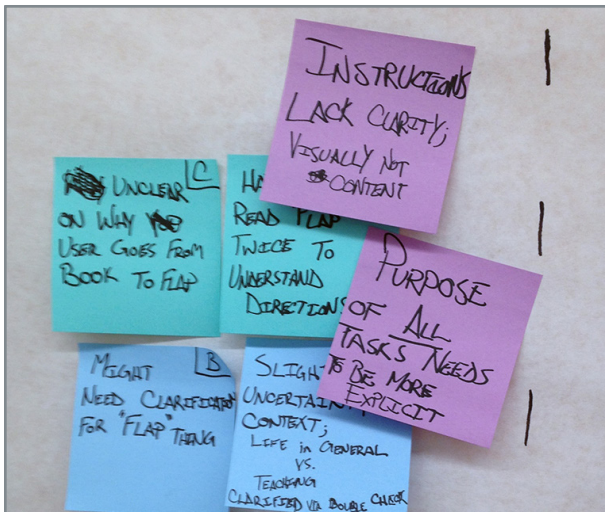


Categorized post-its reveal a need to include more specific example responses

Participants felt the activity for accepting negative comments from students was not useful, commenting that the activity “feels tedious” and “you’re naturally a positive teacher or you’re naturally a negative one.” Similarly to the activity for giving feedback, all the participants gave inappropriate responses. Furthermore, the participants directly expressed a need for specific examples of inappropriate responses with one participant stating “nothing is telling me what *not* to say.” These issues showed a clear need to include example responses for these activities.

Clarity of Instructions

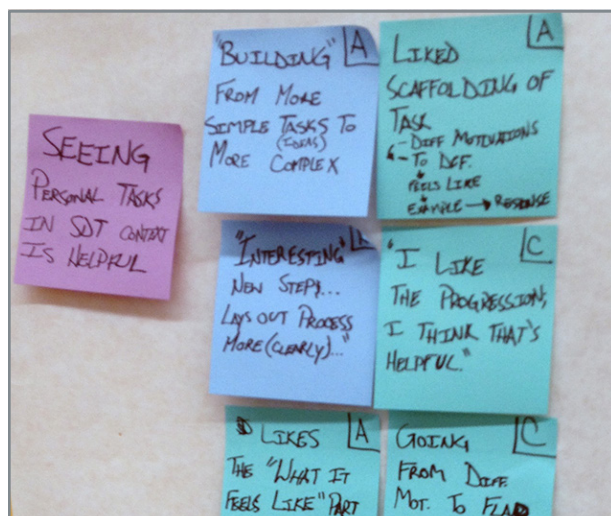
Participants also mentioned the instructions for the recognizing motivation activity, were unclear. One participant commented, “I had to re-read the instructions”. Specifically, the teachers were unclear whether their responses should come from any experience in their lives or just from their teaching experiences. This was also the case for sharing their intrinsic motivations on the inside of the cover with one participant stating they had to “read the flap twice to understand the directions.” In spite of their confusion, teachers still gave appropriate responses to these activities. However, because the final prototype needs to be as self-guided as possible, the instructions should be edited to be more clear for the final iteration. Furthermore, more supplemental instructions throughout the tool to compensate for inadvertent verbal instruction given to participants from the researcher. Increasing clarity of instructions throughout the tool, should support teachers’ competence, making it easier for them to internalize the concepts in the tool and foster intrinsic motivation in their students.



Analysis of feedback from participants showing a lack of clarity from instructions

Scaffolding of Activities

As discussed above, teachers expressed that they “struggled” to create intrinsic goal frames related to learning objectives because they were uncertain whether their responses were appropriate. Although the addition of example responses is intended to alleviate that uncertainty, closer examination of the participants’ attempts at creating intrinsic goal-frames suggests that changes to the activity’s scaffolding should also occur. Instead of responding with truly intrinsic goals, teachers gave examples of pragmatic or practical skills that students could gain through mastery of the learning objective. These responses seemed to be answering the question “what would a student get out of participating in the lesson covering this learning objective?” as opposed to “what intrinsic goal might this learning objective contribute to?” However, teachers could still create an intrinsic goal by answering the question “why might someone’s life improve generally by having this skill?” Because teachers are already inclined to think about practical skills gained from the learning objective, asking them to do so explicitly before they are asked to think of an intrinsic goal would make the task feel more familiar. If successful, the figurative gap between the learning objective and the intrinsic goal would be minimized. Because the intrinsic goal-framing activity was restructured to include an additional step, the final activity for reviewing all the autonomy-supportive behaviors in the primer would also need to be restructured to maintain consistency and avoid confusing teachers.



Participants’ positive responses to scaffolding of activity for recognizing motivation

SWBAT use proper grammar and mechanics.	→ They'll be able to communicate clearly and confidently.	"NOT QUOTE" EXAMPLES
SWBAT identify an author's argument	→ Better understand the messages they receive.	
SWBAT identify a story's theme.	→ Make connections between life's events in order to better understand the world.	

STUDENTS WILL APPLY THE HERO'S JOURNEY TO A MODERN TALE TO SEE HOW IT IS STILL USED.	STUDENTS WILL EXPLORE THE WAYS THAT COMMON MEDIA CAN BE CONNECTED TO STORYTELLING FROM THE PAST TO UNDERSTAND HOW THEIR ENTERTAINMENT IS MADE.	"NOT QUOTE"
STUDENTS WILL UPDATE A SCRIPT TO INCLUDE MODERN ELEMENTS AND MAKE IT MORE RELEVANT	STUDENTS WILL ANALYZE AND DISCUSS THE WAYS THE WORLD HAS CHANGED SINCE (YEAR OF PUBLICATION)	"NOT QUOTE"
STUDENTS WILL COMPARE TWO POSTMODERN NOVELS TO DETERMINE SIMILAR ASPECTS OF STRUCTURE AND THEME	STUDENTS WILL IDENTIFY COMMON ASPECTS IN WHAT THEY READ TO UNDERSTAND HOW WRITING HAS CHANGED.	"NOT QUOTE"

Completed intrinsic goal-framing activity with researcher's notes marking non-intrinsic goals

(12) Final Prototype

Although many changes were made to the final prototype, none of the changes made called for additional design requirements. The design requirements for the lesson planning tool did not change from the previous version of the prototype.

Similarly to the description of the changes made in the previous iteration of the lesson planning tool, changes made to this iteration of the prototype will be discussed relative to the issues discovered through analysis.



Final prototype of The Autonomy-Supportive Planner

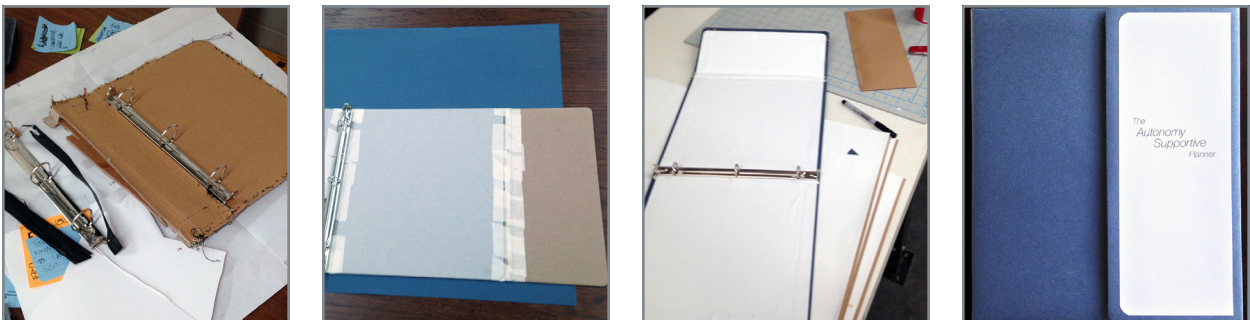
(12.1) Changes Made to Features

Consistency of Fidelity

From the analysis of data collected, a wide gap in fidelity level between the primer, the lesson planner place-holder, and the cover, is believed to be the cause of several points of confusion for potential users. In an attempt to alleviate these points of confusion, the fidelity of the cover was increased to model the fidelity level of the primer, while the fidelity level of the lesson planner was decreased to the same end. Changes were also made within the primer to make its fidelity more consistent. These changes are described here.

The first major change to improve the inconsistency in fidelity is giving the tool and its respective parts titles. The name of the tool in its entirety is *The Autonomy-Supportive Lesson Planner*, and will be referred to as its full title, “the tool”, or “the prototype”. The primer of the tool is called *The Autonomy-Supportive Primer*, and will be referred to as the “Primer”. The lesson planner portion of the tool is called *The Autonomy-Supportive Planner* and will be referred to as the “Planner”. The cover of the tool, which houses both the Primer and the Planner, will now be referred to as the “binder”. Both the binder and the Planner needed to be produced almost entirely from scratch.

The binder was made from two deconstructed, vinyl-wrapped, 1.5” three-ring binders. This was necessary to create the enclosure flap which keeps the binder shut and holds the space for teachers’ intrinsic motivations for teaching (the binder reminder). The binder was constructed by hand using masking tape and a spray adhesive. The enclosure features a light strength magnetic seal, to help keep it closed. The inside of the enclosure flap has two pieces of velcro affixed to it, which are used to hold the removable binder reminder. Although the binder reminder of the finished version of the tool is intended to be permanent, it was made removable in the prototype to allow for multiple user tests. The outside of the enclosure serves as the title plate for the tool. While the binder was constructed by hand, the Planner was created using mostly digital means.



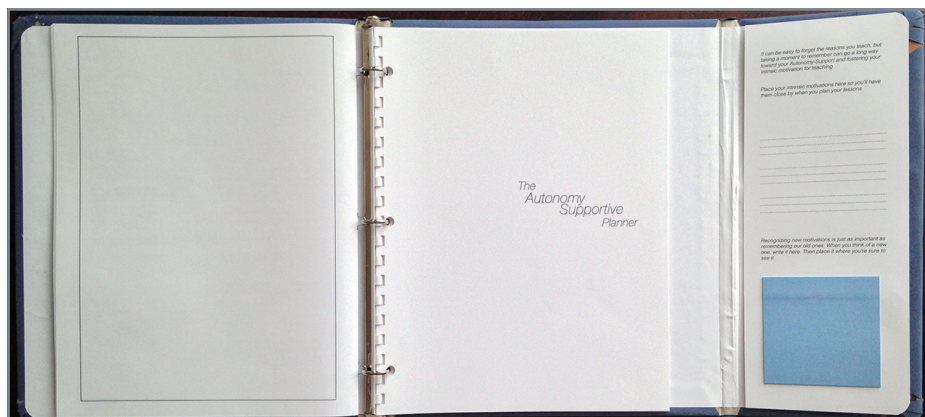
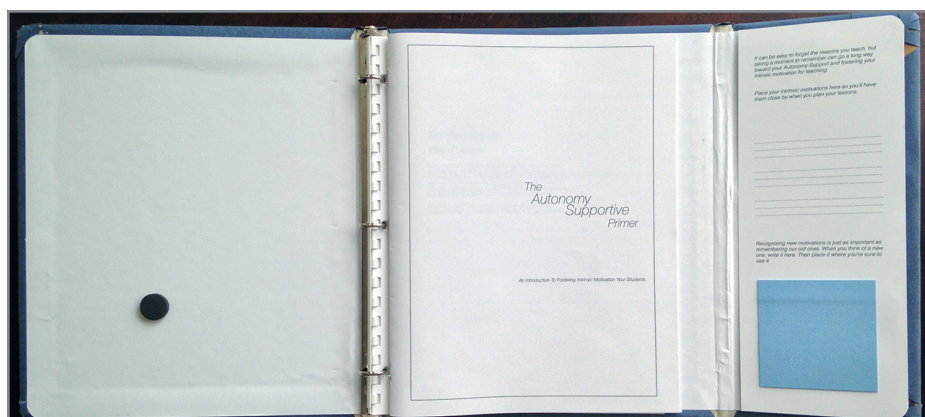
Final prototype at various stages of completion

The design of the Planner’s layout was modeled off the lesson planner used as a placeholder in previous prototypes. Each spread has the days of the workweek (i.e., Monday-Friday) in rows, five columns for different subjects, space for the week’s start date, and a sixth row used to record information directly related to the concepts presented in the Primer. The Planner also uses a light gray dot grid modeled after a trend seen in current planners, agendas, and sketchbooks (e.g., Moleskin ©). These spreads were then printed and three-hole punched to fit in the binder. The Planner is also bound using plastic comb binding so it can be used apart from the binder, if necessary.

WEEK OF: 2 / 2						
M					Learning Objective From this Week:	M
T					Practical Skill of Learning Objective:	T
W					Why Skill Would Improve a Life:	W
Th					Complaint from Students:	Th
F					My Response to Complaint:	F

Lesson Planner pages

Mentioned above, the fidelity level within the Primer needed to be more consistent as well. First of all, the two-page spread containing the two versions of the motivation spectrum were placed immediately before the activity for recognizing motivation. This put all introductory information on SDT at the beginning of the primer. Secondly, each activity was given a generic reference title: “Warm-up” (recognizing motivation), “Activity 1” (intrinsic goal-framing), “Activity 2” (giving feedback), “Activity 3” (accepting feedback), “Activity 4” (all together). Activities 1 and 2 were each redesigned as full spreads. Finally, type treatment throughout the Primer was adjusted to look more uniform. These changes are intended to alleviate points of confusion caused by inconsistencies in fidelity.



Planner and Primer inside of the binder

Example Responses

Activities 1-3 need to include example responses to help teachers understand how to properly utilize autonomy-supportive behavior to foster intrinsic motivation in their students. Because Activity 1 was restructured to improve its scaffolding, an example for each of the steps (learning objective, practical skill, intrinsic goal) is necessary. For Activities 2 and 3, both good (“more autonomy-supportive”) and bad (common) examples are included. Each of the examples is also annotated with explanations to illustrate why it is a “good” or “bad” example. All of the examples in Activity 1, as well as the “common” examples in Activities 2 and 3, were responses given by teachers during previous prototype evaluations. These changes were intended to minimize teachers’ uncertainty in responding, and to support their feelings of competence.

Example

Learning Objective*:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to analyze a text's theme and plot.	→ Ability to empathize with people different from themselves.	→ Having more meaningful and longer lasting relationships

Now try connecting the following learning objectives to Intrinsic Goals

Learning Objective:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
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Read the following example scenario and responses.

Example Scenario

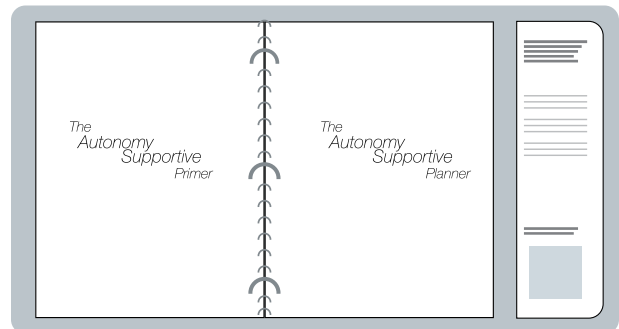
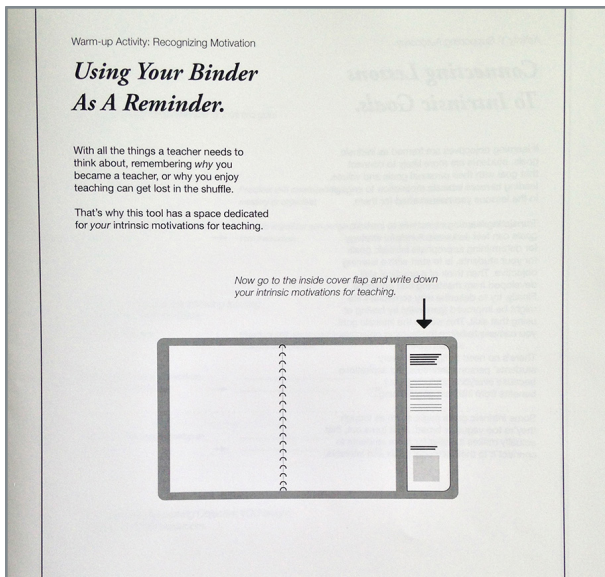
One of your higher performing students brings you the thesis statement she's been working on for her argumentative essay. Although the thesis statement is well written, it doesn't quite establish the argument she intended. You say...

Common Response	More Autonomy-Supportive Response
<p>"You should frame the argument in a way that combats the strongest counter argument."</p> <p>Uses prescriptive language; provides only one strategy</p>	<p>"Have you tried thinking about what the counter argument would be? That can help you determine what your main points in your thesis will be. You could make a list of counter arguments so you can see which ones you haven't yet addressed in your thesis."</p> <p>Uses suggestive rather than prescriptive language</p>

Examples of controlling and autonomy-supportive responses were provided

Clarity of Instructions

The biggest change to improve the clarity of instructions can be seen in the instructions for the binder reminder. A visual mockup of the open binder is used to show the exact location of the binder reminder. The visual was preceded by a brief rationale for why the binder reminder exists. Furthermore, the instructions on the binder reminder were edited to improve clarity of what information is supposed to be shared in the spaces provided. Another addition to improve the Primer's clarity the introductory page describing the Primer's purpose. Smaller changes were also made throughout the Primer including the addition of small arrows on the motivation spectrum for internalization, and quotation marks in the writing spaces where teachers are directed to write what they would actually say to a student. Furthermore, prompts to proceed to the next activity were added to each activity while prompts for which activity to reference were added to the final activity.



Visual models were made to improve instructional clarity

Scaffolding of Activities

The participants' evaluation of the tool highlighted a need to improve the scaffolding of Activity 1. Because the teachers' responses were naturally pointing to practical skills, a third step was included asking teachers explicitly to think of a practical skill acquired through engagement of a learning objective. Teachers are then prompted to think about why acquiring that skill would generally improve someone's life, and use that reason as the intrinsic goal. The activity included an example with all three steps provided, then two prompts which provide a learning objective, but require a practical skill and an intrinsic goal, and the final prompt required the teacher to provide all three. Activity 4 was also restructured to reflect the same steps now included in Activity 1. Now that the changes made in the final prototype have been described, a review of procedures for the final prototype evaluation or user test will follow.

Example		
Learning Objective:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to analyze a text's theme and plot.	→ Ability to empathize with people different from themselves.	→ Having more meaningful and longer lasting relationships
Now try connecting the following learning objectives to Intrinsic Goals		
Learning Objective:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to identify an author's purpose in a text.	→	→
Students will be able to develop an argument.	→	→
Now start with a Learning Objective YOU taught recently in YOUR classroom.		

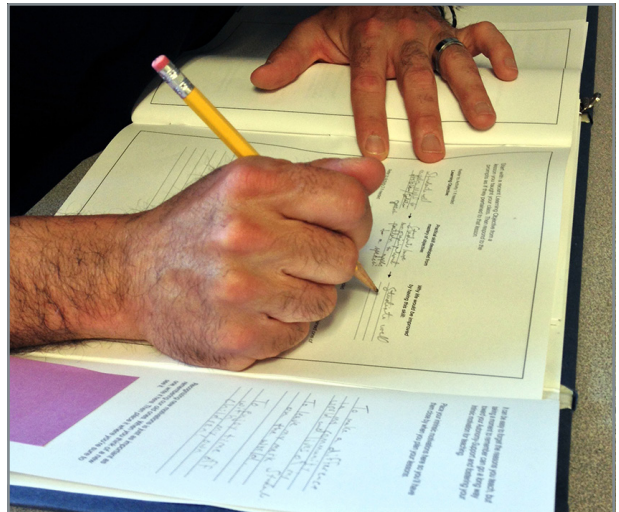
Example		
Learning Objective:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to analyze a text's theme and plot.	→ Ability to empathize with people different from themselves.	→ Having more meaningful and longer lasting relationships
Now try connecting the following learning objectives to Intrinsic Goals		
Learning Objective:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to identify an author's purpose in a text.	→	→
Students will be able to develop an argument.	→	→
Now start with a Learning Objective YOU taught recently in YOUR classroom.		

Start with a recent Learning Objective from a lesson you taught your class. Then respond to the prompts as if they pertained to that lesson.		
Refer to Activity 1 if needed	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Learning Objective:	→	→
.....	→	→
.....	→	→
Refer to Activity 2 if needed	Refer to Activity 3 if needed	
What feedback would you give to the student that has trouble getting started with the assignment?	"Other teachers don't make us do this", complained one of your students. You would say...	
.....	
.....	
.....	
.....	
Refer to Warm-up Activity if needed	What is YOUR intrinsic motivation for teaching this particular lesson?	
.....	
.....	
.....	
.....	

Restructured review activity to include changes from intrinsic goal-framing activity

(12.2) User Test

This round of prototype evaluation is different from the previous evaluations in several ways. First, all new participants were used to test the prototype. This is to ensure users do not have learned biases that influence their use of the tool or responses to questions. Second, participants were not given any information on SDT, its principles, or knowledge pertaining to use of the tool prior to the test. This was also done to minimize bias. Furthermore, participants were instructed to read and complete the activities in the Primer to the best of their ability without assistance from the user test administrator. The questions asked of participants in previous evaluations remained the same, but they were only posed to the participant after they had completed the Primer in its entirety. Finally, the participants were required to respond to a digital survey form used to gauge the teacher's opinion on whether the tool would help them foster intrinsic motivation in their students.

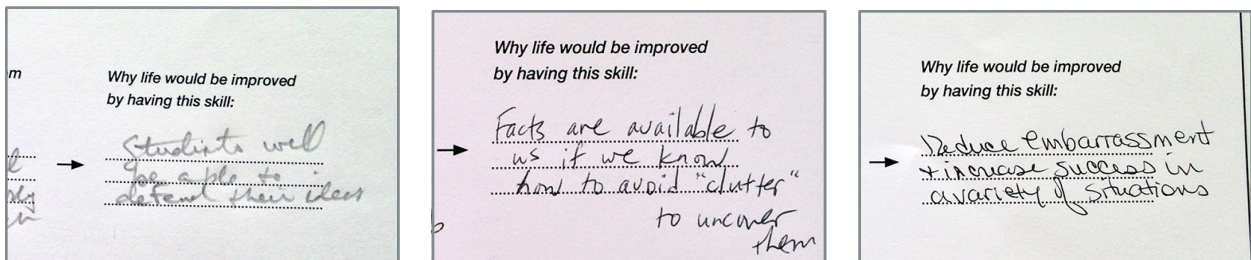


Teachers completing the activities in the Primer during the user test

(12.3) Findings and Results

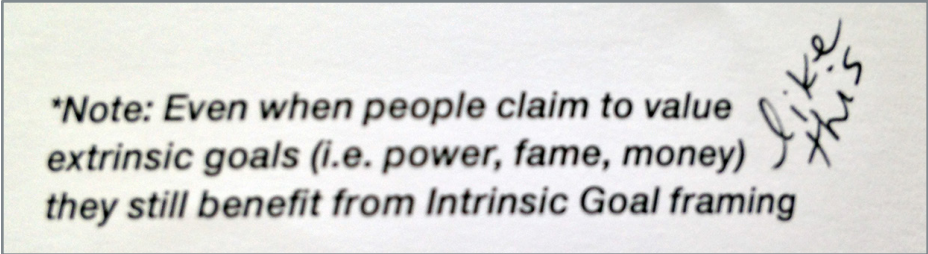
Because the interview questions were posed to participants only after they completed the entirety of the primer, significantly less data was collected for analysis. Therefore, the results of the analysis are driven primarily by the responses teachers gave in the Primer. The final iteration of the prototype elicited significantly less confusion and inappropriate responses from the participants. Only two of the prompts in the primer—both in Activity 4—were responded to in a controlling (i.e., not autonomy-supportive) manner by all three participants. One of the participants also gave a controlling response to a third prompt in Activity 3.

The first prompt all three participants responded to inappropriately was for the intrinsic goal-framing activity. None of the participants provided an intrinsic goal, despite accurately providing appropriate responses for all of the prompts in Activity 1. The second prompt the participants gave undesired responses to was for giving students feedback. Similarly, the participants all gave appropriate responses for Activity 2, the activity for accepting students' negative feedback. None of the participants provided multiple strategies, nor did they refrain from using prescriptive language. The third inappropriate response was given by one teacher in Activity 3. Although the response acknowledged and accepted the students' negative comment, it was also passive-aggressive in nature, which would feel controlling to students. Finally, the only concern expressed by the teachers during the interview was a small amount of uncertainty regarding whether the Warm-up activity should be completed from a teacherly perspective or not.



None of the User test participants provided intrinsic goals in Activity 4

The teachers provided positive feedback and seemed genuinely curious to learn more about SDT and how its principles could further help them in the classroom. The participants all suggested that veteran teachers and preservice teachers alike, could greatly benefit from using the Autonomy-Supportive Lesson Planner to “get out of a rut” and “establish good teaching habits” respectively. The participants also expressed strong interest in having a copy of the tool for future use in the classroom. The teachers also mentioned that the tool’s overall voice was helpful to their understanding of SDT with one teacher revealing “the tone was autonomy-supportive.” They also mentioned that they liked how the tool’s familiarity made it easier for them to understand how the autonomy-supportive behaviors were connected to what they think about while creating lesson plans. Finally, the teachers mentioned that the scaffolding of the activities in the Primer enabled them to understand how the autonomy-supportive behaviors were different from what they already do, which helped them recognize the suggested autonomy-supportive behaviors as valuable.



**Note: Even when people claim to value extrinsic goals (i.e. power, fame, money) they still benefit from Intrinsic Goal framing*

The participants liked several features of The Autonomy-Supportive Planner

(13) **Conclusions And Recommendations**

(13.1) Project Overview

The purpose of this project was to design a new tool that educates high school teachers about environments in an attempt to ultimately improve their student's intrinsic motivation. A review of the current literature revealed that a teacher's behavior affects students' feelings of autonomy, relatedness, and competence, which directly influence an individual's feelings of intrinsic motivation. Furthermore, the literature highlighted inhibitions teachers have to using strategies that foster intrinsic motivation such as a lack theoretical knowledge regarding motivation, various external pressures (i.e., administrative obligations), and inaccurately equating autonomy with chaos (Pelletier and Sharp 2009). A user centered design approach was established to take teachers' needs into consideration for creating a solution for low intrinsic motivation in high school students.

First a design research process was determined, drawing heavily from the field of user experience design. Then a thorough understanding of the context was formed by soliciting teachers' views on their own autonomy, establishing teachers' common practices for lesson planning, and reviewing current lesson planning tools. This portion of the research revealed that the tool should be designed to fit within high school teachers' lesson planning process. Then four sets of prototypes were designed and evaluated to determine design requirements informed by teachers' needs.

The first set of prototypes revealed that teachers may have a limited understanding in self-determination theory and its concepts. Evaluation of teachers' feedback on the prototypes also revealed a strong preference for the tool to take on a familiar form (i.e., physical). The second prototype revealed that specific information regarding the effects of autonomy-supportive behavior, and the subtypes of extrinsic motivation would be necessary to include in the tool. The third prototype showed that the activities in the Primer needed to include good and bad examples of giving feedback to students as

well as accepting negative comments from them. It also highlighted teachers' need for the tool's activities to be scaffolded. The final prototype revealed that teachers' could use a tool to learn about and practice autonomy-supportive behaviors. Furthermore, it showed that a tool could be used as a mechanism to persuade teachers' that autonomy-supportive behaviors have a more positive effect on their students' intrinsic motivation than controlling behaviors.

(13.2) Future Research Implications

Although the participant pool was small, the final prototyped solution was desired by participants. However, further investigation in this field will need to be done in the following areas.

Tool Context and Purpose

Early in the research it was determined that the tool would be intended to help teachers implement autonomy-supportive behavior in the classroom through the context of lesson planning. Future research could explore tools for onboarding, troubleshooting, or reflection of SDT and autonomy-supportive behaviors. Furthermore, other classroom practices that are shared across subject domains (e.g., grading, giving lecture, class discussion) could also be explored for tool integration. Future research, could also be done to validate the lesson planning tool for the other subject domains (e.g., math, science, history).

Visual Design

Visual design and layout choices implemented in the prototype act as a good baseline for facilitating teachers' understanding of SDT. The visual design of the tool still needs final refinement to be a legitimate product. More work should be done to ensure that the layout, aesthetic and typographic decisions increase the tool's usefulness, desirability, and usability.

Physical Interaction

Due to time constraints, the designed solution had very little in the ways of physical interaction with the actual tool. Future research could explore different strategies for including physical interactions in the form of pop-up folds to engage teachers with information on SDT and demonstration of autonomy-supportive behaviors.

Digital Tools

Finally, researchers could investigate methods of designing digital tools to help teachers foster intrinsic motivation in students. The context of this research (Indiana high school English teachers) determined an analogue tool to be a more appropriate solution than a digital tool. However, contexts where teachers have more intrinsic motivation or autonomy-supportive extrinsic motivation to utilize digital tools for teaching-related practices (e.g., online courses or technology classes) might see a greater need for a digital tool. Further research of digital designs could lead to more intrinsically motivated integration of technology in classrooms.

(13.3) Conclusion

This research investigated how a design process could be used to create a tool that helps teachers integrate autonomy-supportive behaviors into classroom practices to foster intrinsic motivation in students.

Through the creation and evaluation of multiple low-fidelity prototypes, design requirements for the tool were established, and a solution was formed. By including high school English teachers in the evaluation process, design ideas were vetted by the users for which they were intended. Furthermore, input from the evaluations was used to directly inform subsequent design alternatives, leading to a more contextually appropriate and human-centered solution could help teachers and their students.

By using a design process to create a tool that integrates autonomy-supportive behaviors into teachers' lesson planning process, teachers will be able to make lessons more autonomy-supportive, which could lead to more intrinsic motivation in their students. Although small in scope, this project shows that a tool can be useful for: 1) increasing a teacher's awareness of the importance of intrinsic motivation and 2) giving teachers practical examples of how to better integrate these concepts into their lessons. Furthermore, an important contribution—potentially impacting the fields of psychology, education, and design—was made in the form of a foundational characteristics of autonomy-supportive tools. Indiana High school English teachers were the focus of this study, but the following identified characteristics should be applied to contexts in which school-wide reform programs are unavailable or inadequate.

Integrated

Whether digital or physical, tools intended to alter teachers' classroom practices with SDT principles should be designed to integrate within their current practices. More specifically, the ideals and practices the tool intends for the teacher to adopt, should be related to practices the teacher already does. Furthermore, the new ideals and practices cannot be seen as a threat to teachers' current responsibilities. This research has shown that teachers are more willing to adopt new classroom practices when they are integrated within existing procedures.

Scaffolded

It makes sense that a tool used to alter classroom practices be designed for the practices they are intended (i.e., a tool to alter lesson planning practices is designed for lesson planning). However, teachers cannot just be given theoretical knowledge (i.e. SDT) and be expected to know what to do with it. Teachers need information and instructions, to be scaffolded in a way that allows them understand the cognitive steps necessary to achieve a particular goal. This research has shown that proper scaffolding of information on SDT and activities for learning autonomy-supportive behaviors, enables teachers identify the tool and its information as valuable.

Autonomy-Supportive

By providing autonomy-support to teachers via the tool's overall tone of voice, teachers will be able to internalize the ideals of SDT more easily. Internalization of SDT and its concepts leads to more autonomy-supportive behavior from teachers and more intrinsic motivation in their students. A crucial hurdle in affecting teachers' classroom practices, this research has shown that a tool could provide autonomy-support to teachers.

(13.4) Final Thoughts

Although the scale and scope of this research did not allow for a complete tool to be designed, characteristics of a successful tool for motivation were identified. With these characteristics in place, researchers and educators can begin to design and implement more contextually specific tools to help teachers foster intrinsic motivation in students. Enlightenment Era idealist Jean-Jacque Rousseau argued that education is the cultivation of natural aptitudes, rather than the infliction of knowledge (Lupton et al. 1993). By a similar token, educators should not impose motivations (i.e., external) for learning on students, but foster the inherent, intrinsic motivations within students through autonomy-supportive classroom practices. Giving educators a tool to incorporate autonomy-supportive behaviors in their classroom, can lead to higher levels of intrinsic motivation in students. Helping teachers improve students' intrinsic motivation for learning, has the potential to change how motivation is viewed and harnessed within education.

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- Niemiec, Christopher P., and Richard M. Ryan. 2009. "Autonomy, Competence, and Relatedness in the Classroom Applying Self-Determination Theory to Educational Practice." *Theory and Research in Education* 7 (2): 133–44. doi:10.1177/1477878509104318.
- Pelletier, Luc G., and Elizabeth C. Sharp. 2009. "Administrative Pressures and Teachers' Interpersonal Behaviour in the Classroom." *Theory and Research in Education* 7 (2): 174–83. doi:10.1177/1477878509104322.
- Pink, Daniel H. 2011. *Drive: The Surprising Truth About What Motivates Us*. Riverhead Books.
- Reeve, Johnmarshall. 2009. "Why Teachers Adopt a Controlling Motivating Style toward Students and How They Can Become More Autonomy Supportive." *Educational Psychologist* 44 (3): 159–75.
- Reeve, Johnmarshall, and Marc Halusic. 2009. "How K-12 Teachers Can Put Self-Determination Theory Principles into Practice." *Theory and Research in Education* 7 (2): 145–54. doi:10.1177/1477878509104319.
- Rogers, Yvonne, Helen Sharp, and Jenny Preece. 2011. *Interaction Design: Beyond Human-Computer Interaction*. John Wiley & Sons.
- Roth, Guy, Avi Assor, Yaniv Kanat-Maymon, and Haya Kaplan. 2007. "Autonomous Motivation for Teaching: How Self-Determined Teaching May Lead to Self-Determined Learning." *Journal of Educational Psychology* 99 (4): 761.
- Roth, Guy, and Michael Weinstock. 2013. "Teachers' Epistemological Beliefs as an Antecedent of Autonomy-Supportive Teaching." *Motivation & Emotion* 37 (3): 402–12. doi:10.1007/s11031-012-9338-x.
- Saffer, Dan. 2009. *Designing for Interaction: Creating Innovative Applications and Devices*. New Riders.
- Saldaña, Johnny. 2012. *The Coding Manual for Qualitative Researchers*. 14. Sage.

Skinner, B. F. 1957. "The Experimental Analysis of Behavior." *American Scientist*, 343–71.

Vansteenkiste, Maarten, Bart Soenens, Joke Verstuyf, and Willy Lens. 2009. "What Is the Usefulness of Your Schoolwork?' The Differential Effects of Intrinsic and Extrinsic Goal Framing on Optimal Learning." *Theory and Research in Education* 7 (2): 155–63. doi:10.1177/1477878509104320.

(15) **Appendix**

(15.1) Literature Review

Assor, Avi, Haya Kaplan, Ofra Feinberg, and Karen Tal. 2009. "Combining Vision with Voice A Learning and Implementation Structure Promoting Teachers' Internalization of Practices Based on Self-Determination Theory." *Theory and Research in Education* 7 (2): 234–43.
doi:10.1177/1477878509104328.

This article reports on the results of a school reformation program which is based on the principles of Self-Determination Theory. The program was designed to promote teachers acceptance and use of SDT principles in the classroom. The program itself used the principles of SDT to create an autonomy-supportive environment, which enabled teachers to experience and more readily internalize the principles of SDT.

Assor, Avi, Haya Kaplan, and Guy Roth. 2002. "Choice Is Good, but Relevance Is Excellent: Autonomy-Enhancing and Suppressing Teacher Behaviours Predicting Students' Engagement in Schoolwork." *British Journal of Educational Psychology* 72 (2): 261–78.

This article describes how students can differentiate between six different teacher behaviors that either enhance or impair students' feelings of autonomy, and willingness to engage in an activity. Autonomy-enhancing behaviours include fostering relevance, providing choice, and allowing criticism while autonomy-suppressing behaviors include suppressing criticism and independent opinions. Of these behaviors, fostering relevance and suppressing criticism were found to be relatively more important for autonomy enhancement and suppression.

Assor, Avi, Maarten Vansteenkiste, and Avi Kaplan. 2009. "Identified versus Introjected Approach and Introjected Avoidance Motivations in School and in Sports: The Limited Benefits of Self-Worth Strivings." *Journal of Educational Psychology* 101 (2): 482.

This article compared two types of introjected motivation—that which is aimed at avoiding low self-worth and that which is aimed at attaining high self-worth—with identified motivation. Both forms of introjected motivation were found to have significantly less benefits when compared to identified motivation.

Buley, Leah. 2013. *The User Experience Team of One*. Rosenfeld Media.

This book provides methods for conducting user experience research with non designers. Buley provides practical tips and techniques for gathering data that will lead to appropriate design outcomes.

Chung, Jack, Shelley Evenson, and Paul Pangaro. 2015. "A Model of The Creative Process." Accessed June 10. <http://www.dubberly.com/concept-maps/creative-process.html>.

Visual model of creative process used to synthesize a design process for this research project.

Cooper, Alan, Robert Reimann, David Cronin, and Christopher Noessel. 2014. *About Face: The Essentials of Interaction Design*. John Wiley & Sons.

This book is a comprehensive account of user-experience and interaction design as they relate to digital products and services. The book provides methods, case studies, and interviews of industry leaders to describe each phase of the UX/IX design process

Deci, Edward L. 2009. "Large-Scale School Reform as Viewed from the Self-Determination Theory Perspective." *Theory and Research in Education* 7 (2): 244–52. doi:10.1177/1477878509104329.

This article examines the process of large-scale school reform through the lens of Self-Determination Theory. Deci presents the merits of supporting feelings of autonomy, relatedness, and competence for both teachers and students as a strategy for the successful implementation of school reform programs. First Things First, a school reform program based on SDT, is shown as a successful example by way of small learning communities, a family and student advocate system, and instructional improvement.

Deci, Edward L., and Richard M. Ryan. 2000a. "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being." *American Psychologist, Positive Psychology*, 55 (1): 68–78. doi:10.1037/0003-066X.55.1.68.

This article describes the framework self-determination theory (SDT). This framework is presented as a continuum that includes amotivation, extrinsic motivation and intrinsic motivation. Within extrinsic motivation, Deci and Ryan define four regulatory styles which describe the extent to which the engagement of an activity or goal is felt as being externally or internally driven. The process by which a person transitions from feeling a task or goal as externally driven to internally driven is called internalization. Deci and Ryan assert that the support of one's basic psychological needs of relatedness, competence and autonomy can facilitate the process of internalization.

— — —. 2000b. "The 'What' and 'Why' of Goal Pursuits: Human Needs and the Self-Determination of Behavior." *Psychological Inquiry* 11 (4): 227.

In this journal entry, Deci and Ryan discuss how the support of psychological needs supports psychological growth and well-being. Then they describe how the different regulatory processes are affected by the content of a goal pursuit. Their research showed how support for autonomy, relatedness and competence can: 1) maintain or enhance feelings of intrinsic motivation, 2) facilitate the internalization and integration of extrinsic motivation, and 3) promote or strengthen aspirations or life goals.

Ferrer-Caja, Emilio, and Maureen R. Weiss. 2002. "Cross-Validation of a Model of Intrinsic Motivation with Students Enrolled in High School Elective Courses." *The Journal of Experimental Education* 71 (1): 41–65.

This article determined that high school students have higher intrinsic motivation to participate in their elective courses because they had higher autonomy for choosing the course. This helped limit the scope of this research project to only non elective courses.

Ford, Dr. Valjeaner B. 2013. "Why Do High School Students Lack Motivation in the Classroom?" *Global Education Journal* 2013 (2).

This article identified the lack of motivation, or amotivation, in high school students as an ongoing problem within U.S. schools. This helped establish the problem space and the context of research for this project.

Gillet, Nicolas, Robert Vallerand, and Marc-André Lafrenière. 2012. "Intrinsic and Extrinsic School Motivation as a Function of Age: The Mediating Role of Autonomy Support." *Social Psychology of Education* 15 (1): 77–95. doi:10.1007/s11218-011-9170-2.

This study investigated student's amotivation, intrinsic motivation, and extrinsic motivation as a function of age, from early elementary school to the end of high school. Generally the study showed that intrinsic and self-determined types of extrinsic motivation decreased sharply when transitioning to middle school, leveling out during middle school and then increasing at the sophomore year of high school. Non self-determined forms of extrinsic motivation also showed a decreased during the transition from elementary school to middle school however, amotivation in students of all ages was relatively low. Furthermore, the study highlighted the pivotal role of autonomy-supportive behavior from teachers and parents in mitigating the negative effects of low intrinsic motivation towards school.

Herr, Kathryn, and Gary L. Anderson. 2005. *The Action Research Dissertation: A Guide for Students and Faculty*. Sage.

This book provides an outline of the action research methodology used to guide this research project and the methods of research used.

Jang, Hyungshim, Johnmarshall Reeve, and Edward L. Deci. 2010. "Engaging Students in Learning Activities: It Is Not Autonomy Support or Structure but Autonomy Support and Structure." *Journal of Educational Psychology* 102 (3): 588.

In this article, Jang describes why teachers' have aversions to providing students with autonomy-support. The results show that teachers unjustly equate autonomy with a lack of structure even though previous studies show that autonomy-supportive teachers have more structure.

Kolko, Jon. 2010. *Exposing the Magic of Design: A Practitioner's Guide to the Methods and Theory of Synthesis*. Oxford University Press.

This book outlines practical methods for analyzing qualitative data to inform design related outcomes. The process Kolko describes was used to establish analysis methods for this research project.

Krippendorff*, Klaus. 2004. "Intrinsic Motivation and Human-Centred Design." *Theoretical Issues in Ergonomics Science* 5 (1): 43–72.

This paper is intended to call forth a paradigm shift from object-centered to human-centered design by contrasting extrinsic and intrinsic motivation. This discussion is useful for this thesis in establishing a need for there to be a more human-centered approach in not only how teachers affect motivation in their students, but also in how the methods teachers use are designed.

Kumar, Vijay. 2012. *101 Design Methods: A Structured Approach for Driving Innovation in Your Organization*. John Wiley & Sons.

This book is a lexicon of people-centered design research methods for each phase of the design process. Methods from this book were used to inform specific methods of research for this project.

Kusurkar, R. A., G. Croiset, and Olle Th. J. Ten Cate. 2011. "Twelve Tips to Stimulate Intrinsic Motivation in Students through Autonomy-Supportive Classroom Teaching Derived from Self-Determination Theory." *Medical Teacher* 33 (12): 978–82. doi:10.3109/0142159X.2011.599896.

This journal entry provides a list of pedagogical practices teachers may find useful in providing autonomy-support to students. These practices helped determine which autonomy-supportive behaviors to utilize in the designed solution for this research project.

Legault, Lisa, Isabelle Green-Demers, and Luc Pelletier. 2006. "Why Do High School Students Lack Motivation in the Classroom? Toward an Understanding of Academic Amotivation and the Role of Social Support." *Journal of Educational Psychology* 98 (3): 567.

In this journal entry, Legault determines that high school students lack motivation to engage in academic activities because they are not seen as valuable to the students. Furthermore students might find the activities boring, or believe that they will not be able to perform the tasks effectively. This article was used in establishing the problem space for this research.

Lupton, Ellen, and J. Abbott Miller. 1999. *The ABC's of The Bauhaus and Design Theory*. Princeton Architectural Press, Inc. reprint.

This book describes the history and defining ideals of The Bauhaus design movement, and was used to establish a contextual link between design and education.

Martin, Bella, and Bruce Hanington. 2012. *Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions*. Rockport Pub.

This book provides a catalog of people-centered design research methods for the various stages in the design process.

Niemiec, Christopher P., and Richard M. Ryan. 2009. "Autonomy, Competence, and Relatedness in the Classroom Applying Self-Determination Theory to Educational Practice." *Theory and Research in Education* 7 (2): 133–44. doi:10.1177/1477878509104318.

This journal entry describes an overview of self-determination theory and its practical applications to education practices. It provides a wealth of evidence suggesting that teachers can facilitate students inherent human tendencies for learning by supporting students' needs for autonomy, competence, and relatedness.

Pelletier, Luc G., and Elizabeth C. Sharp. 2009. "Administrative Pressures and Teachers' Interpersonal Behaviour in the Classroom." *Theory and Research in Education* 7 (2): 174–83. doi:10.1177/1477878509104322.

This article determined that administrative pressure placed on teachers frustrates their basic psychological needs. This is a major inhibition for teachers providing autonomy-support in the classroom.

Pink, Daniel H. 2011. *Drive: The Surprising Truth About What Motivates Us*. Riverhead Books.

This book further describes strategies for fostering people's intrinsic motivation through feelings of autonomy and mastery.

Reeve, Johnmarshall. 2009. "Why Teachers Adopt a Controlling Motivating Style toward Students and How They Can Become More Autonomy Supportive." *Educational Psychologist* 44 (3): 159–75.

This article is a thorough investigation of the contributing factors that lead to teachers' adoption of a controlling style. Furthermore, Reeve describes several general strategies teachers can use to become more autonomy-supportive. These strategies were used to inform the autonomy-supportive behaviors included in the designed solution for this research project.

Reeve, Johnmarshall, and Marc Halusic. 2009. "How K-12 Teachers Can Put Self-Determination Theory Principles into Practice." *Theory and Research in Education* 7 (2): 145–54. doi:10.1177/1477878509104319.

This article catalogs eight frequently asked questions from teachers regarding the practical implementation of SDT in the classroom. It also illustrates a framework relating the strategies to the questions. Although this article takes a vital step toward helping teachers perform more autonomy-supportive behavior, the strategies provided are contextually vague.

Rogers, Yvonne, Helen Sharp, and Jenny Preece. 2011. *Interaction Design: Beyond Human-Computer Interaction*. John Wiley & Sons.

This book is a comprehensive account of interaction design as it pertains to human experiences of interacting with products and services.

Roth, Guy, Avi Assor, Yaniv Kanat-Maymon, and Haya Kaplan. 2007. "Autonomous Motivation for Teaching: How Self-Determined Teaching May Lead to Self-Determined Learning." *Journal of Educational Psychology* 99 (4): 761.

This article determines that teachers who are given autonomy-support in their teaching practices are more likely to internalize autonomy-supportive behavior and provide autonomy-support to their students. This information was used to establish some of the design requirements during this research project.

Roth, Guy, and Michael Weinstock. 2013. "Teachers' Epistemological Beliefs as an Antecedent of Autonomy-Supportive Teaching." *Motivation & Emotion* 37 (3): 402–12. doi:10.1007/s11031-012-9338-x.

This article investigated whether teachers' personal beliefs could cause them to be more controlling with their students. Furthermore, Roth determined that teachers' personal beliefs for pedagogical practices could be changed.

Saffer, Dan. 2009. *Designing for Interaction: Creating Innovative Applications and Devices*. New Riders.

This book describes and defines the interaction design process as it pertains to digital experiences and was used to define user experience design for this research project.

Saldaña, Johnny. 2012. *The Coding Manual for Qualitative Researchers*. 14. Sage.

This book provides a lexicon of qualitative data analysis methods that require researchers to utilize established codes to find patterns and derive insights from data collected. A small selection of these methods were used to develop the analysis process used in this research project.

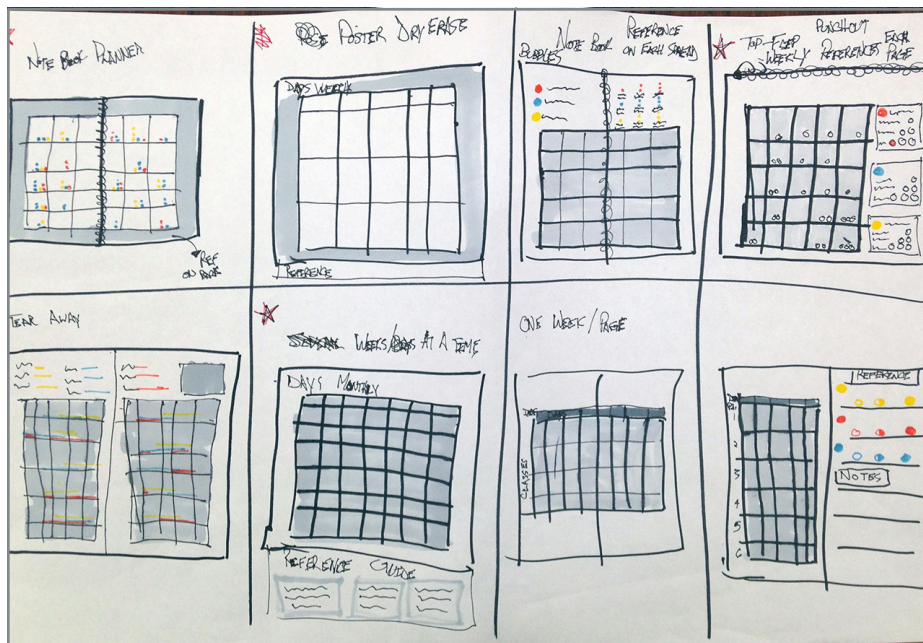
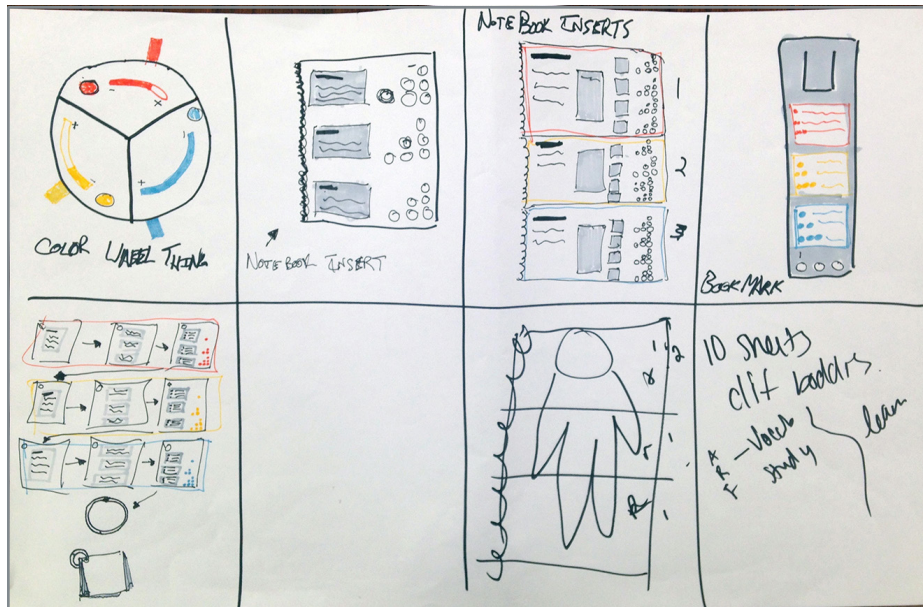
Skinner, B. F. 1957. "The Experimental Analysis of Behavior." *American Scientist*, 343–71.

This article helped to determine the cognitive effects of rewards and punishments related to specific behavior and established motivational psychology as a legitimate field of study.

Vansteenkiste, Maarten, Bart Soenens, Joke Verstuyf, and Willy Lens. 2009. "What Is the Usefulness of Your Schoolwork?' The Differential Effects of Intrinsic and Extrinsic Goal Framing on Optimal Learning." *Theory and Research in Education* 7 (2): 155–63. doi:10.1177/1477878509104320.

This article presents a clear distinction between extrinsic and intrinsic goal-framing. Vansteenkiste shows how intrinsic goal-framing of a task can benefit students, regardless of their personal preference of goals.

(15.2) Initial Prototypes



Initial prototype sketches

AUTONOMY

DEFINITION

EFFECTS OF:

- THING
- THING
- THING
- THING

STRATEGIES:

TRACKING:

NONE

ONE

MULTIPLE

ALL

SUBJECT:	SUBJECT:	SUBJECT:

MASTERY

DEF

EFFECTS OF:

- THING
- THING
- THING
- THING

STRATEGIES:

TRACKING:

NONE

ONE

MULTIPLE

ALL

RELATEDNESS

DEF

EFFECTS OF:

- THING
- THING
- THING
- THING

STRATEGIES:

TRACKING:

NONE

ONE

MULTIPLE

ALL

	MON	TUES	WED	THUR	FRI
1					
2					
3					
4					
5					

RELATEDNESS

DEF

THINGS TO AFFECT

- THING
- THING
- THING
- THING

TRACKING:

NONE

ONE

MULTIPLE

ALL

MASTERY

DEF

THINGS:

- THING
- THING
- THING
- THING

TRACKING:

NONE

ONE

MULTIPLE

ALL

AUTONOMY

DEF

THINGS:

- THING
- THING
- THING

TRACKING:

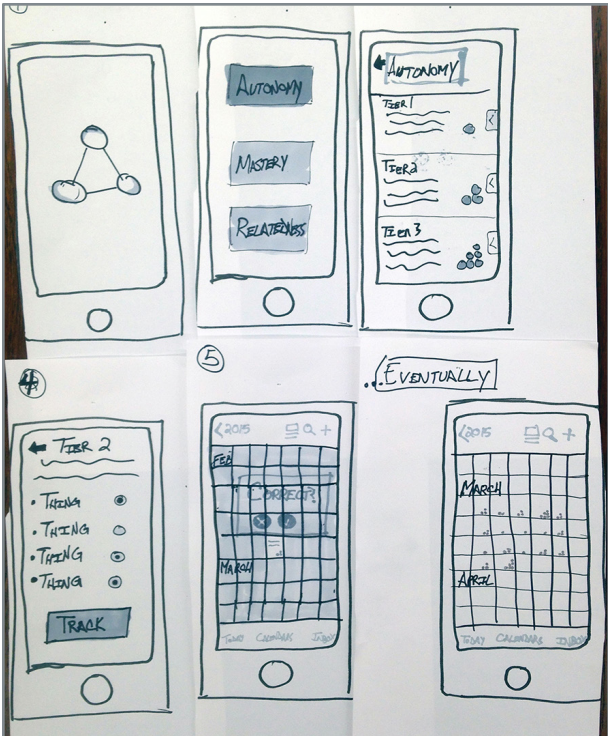
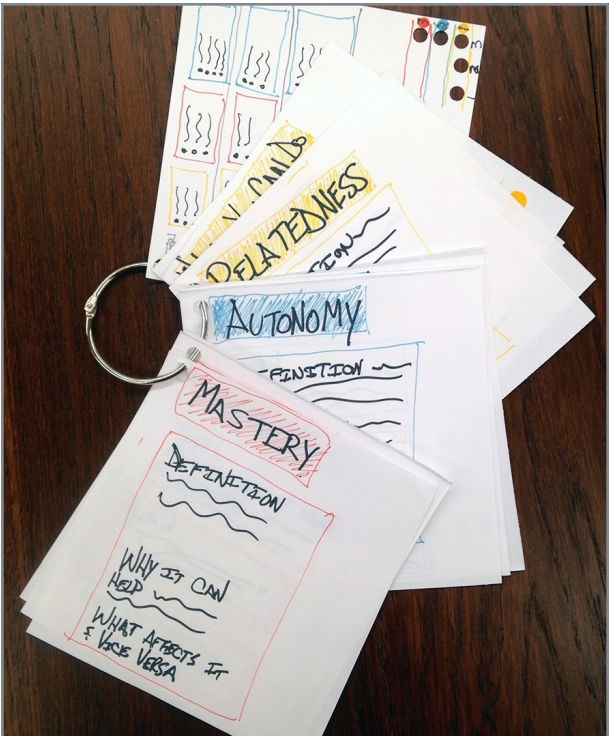
NONE

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MULTIPLE

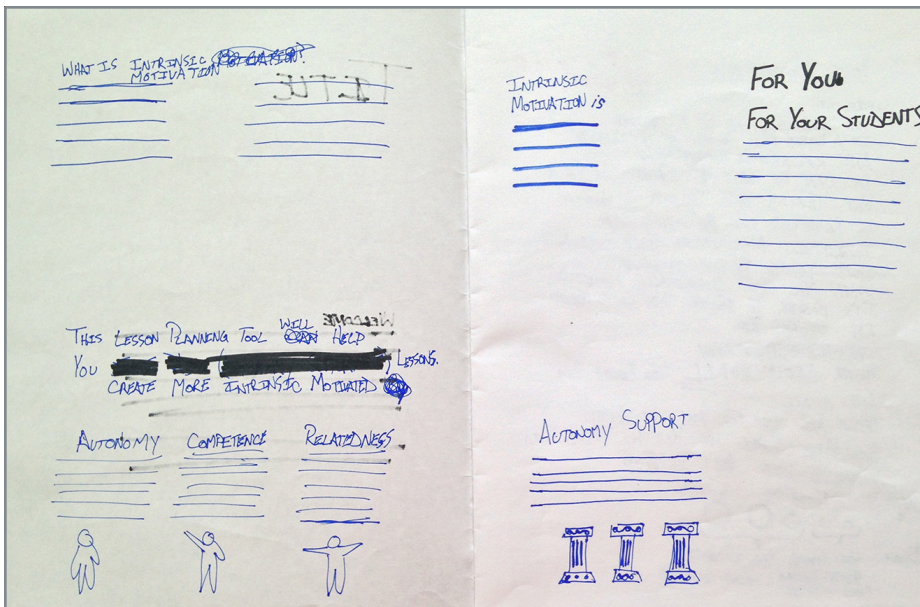
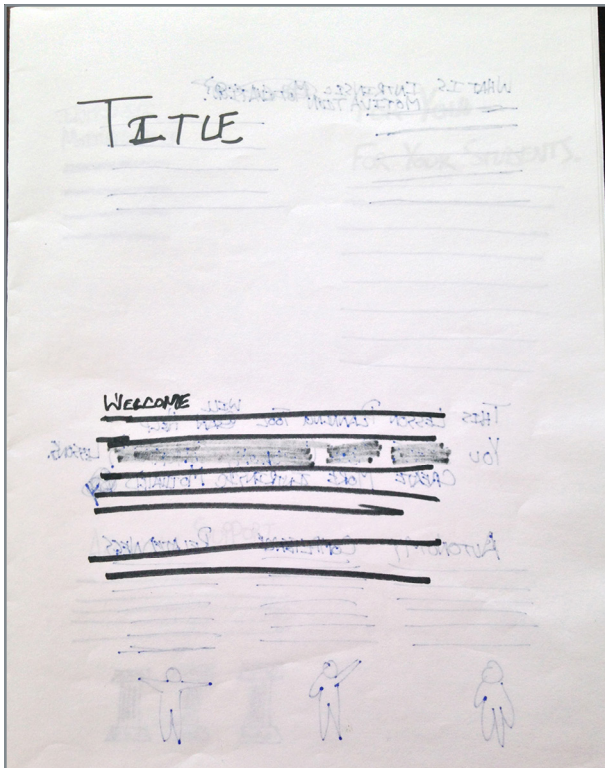
ALL

Weekly planner and monthly planner



Poster, reference guide and planner app prototypes

(15.3) 2nd Prototype



Initial sketches of primer

Your Motivations ^{WHEN DOES IT FEEL ENJOY MY PROCESS?}
 THE DAILY ROUTINE OF A TEACHER
 IS A DOUBLE EDGE SWORD OF FRUSTRATION
 AND REWARDING EXPERIENCES...
 IT CAN BE EASY TO FORGET THE REASONS
 YOU TEACH, BUT TAKING A MOMENT
 TO REMEMBER CAN REFRESH YOUR
 INTRINSIC MOTIVATION. ~~YOUR STUDENTS~~
~~WHEN YOU FEEL FRUSTRATED~~
 WHEN YOU FEEL INTRINSICALLY MOTIVATED,
 IT'S EASIER TO FOSTER THAT SAME FEELING
 IN OTHERS. ~~WHEN~~
~~THINK ABOUT ALL~~ THE REASONS BIG
 AND SMALL
 THESE ARE JUST FOR YOU ~~SO WHEN~~
 SO MANY ~~SURE~~ THE REASONS ARE YOURS
 SHARE THEM ~~AND~~ THE "FLAP"
 EXTRINSIC INTRINSIC
 ○ ○ ○ ○
 FEELS EXTERNAL FEELS INTERNAL
~~FEELS CONTROLLED~~ AUTONOMY SUPPORTIVE
 FEELS CONTROLLED

FEEDBACK - WHEN IN PROCESS

HOW MANY STUDENTS GET FEEDBACK ON, AND HOW IT'S PRESENTED GREATLY AFFECTS THEIR DESIRE TO ENGAGE.

WHEN COMMENCING ON STUDENTS PERFORMANCE, IT'S HELPFUL TO DOWNPLAY EVALUATION OF THEIR RESULTS & EMPHASIZE HOW EFFECTIVE THEIR STRATEGIES ARE EVEN FOR THE NEW BEGINNING STUDENTS.

CONCEPTS

IT'S A COMMON MISTAKE TO WANT TO ASK WHEN SOMEONE IS STRUGGLING, BUT INSTEAD OF THAT, TO FIRST BRIDGE THEM, WHICH CREATES THEIR OWN STRATEGY TO IMPROVE PERFORMANCE.

GOAL FRAMING - WHEN IN PROCESS

HOW TASKS ARE FRAMED TO MEET NEEDS FOR RELEVANCE, COMPETENCE, & SELF-ACCEPTANCE FOR TASK...

EXAMPLE GOALS: SELF-ACCEPTANCE, COMPETENCE

CONCEPTS

REWRITE

Week of _____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
Date _____ Monday						
Date _____ Tuesday						
Date _____ Wednesday						
Date _____ Thursday						
Date _____ Friday						

Lunchroom _____ Playground _____
 Special Events _____ Meetings _____

1. _____ ☐ IN ☐ EX
 2. _____ ☐ IN ☐ EX
 3. _____ ☐ IN ☐ EX
 4. _____ ☐ IN ☐ EX

ADDING NEW MEMBERS IS JUST AS IMPORTANT AS KEEPING OLD ONES AND FRIENDS. ~~SHARE A NEW DUTY~~

I REALIZED ANOTHER REASON I TEACH _____

☐ IN ☐ EX

SHARE YOUR REASONS FOR TEACHING HERE SO YOUR REASONS CAN CONTINUE TO REPEAT YOUR VALUES

1. _____ ☐ IN ☐ EX
 2. _____ ☐ IN ☐ EX
 3. _____ ☐ IN ☐ EX
 4. _____ ☐ IN ☐ EX

ADDING NEW MEMBERS IS JUST AS IMPORTANT AS KEEPING OLD ONES AND FRIENDS. ~~SHARE A NEW DUTY~~

I REALIZED ANOTHER REASON I TEACH _____

☐ IN ☐ EX

SHARE YOUR REASONS
FOR TEACHING HERE SO
YOUR ~~REASONS~~ LESSONS CAN
~~SO~~ CONTINUE TO REFLECT
~~THE~~ YOUR VALUES

1) _____ ☐ EX ☐ IN

2) _____ ☐ IN
_____ ☐ EX

3) _____ ☐ IN
_____ ☐ EX

4)

1
ADDING NEW MOTIVATIONS
IS JUST AS IMPORTANT AS
KEEPING OLD ONES IN
MIND. ~~THE~~ SHARE A NEW ONE HERE.

I REALIZED
ANOTHER REASON I
TEACH _____

☐ IN ☐ EX

A New Plan...

This tool kit will help you prepare lessons that will foster your students' intrinsic motivations, as well as your own.

What is Intrinsic Motivation?

Intrinsic motivation is what drives people to intentionally engage in activities of their choosing. Intrinsic motivation causes people to explore the world around them, seek new knowledge, and establish meaningful relationships.

Everyone's Intrinsic Motivation can be fostered by supporting three basic psychological needs:

Relatedness

People need to feel a sense of belonging in order to experience relatedness. Feelings of relatedness can be fostered through the development of warm, caring, and respectful relationships.

Competence

When people think they're good at something, they feel competence in their ability to perform. Feelings of competence are improved by providing an optimal challenge and giving feedback on the process someone used to complete the task.

Autonomy

People feel autonomous when they view their decisions to act as voluntary. They also need to believe that they had a choice of whether or not to act and in what way. Autonomy is enhanced when people are provided with choice and meaningful rationale to take action.

Autonomy-Support

A bit of a misnomer, Autonomy-Support refers to actions someone can take to improve all three of the basic psychological needs: Relatedness, Competence, and of course Autonomy.

The activities provided are designed to help you think about actions you can take during the lesson that are Autonomy-Supportive.

Autonomy-support in the classroom starts with you.

So let's start by supporting you...

It can be easy to forget the reasons you teach, but taking a moment to remember can go a long way toward your Autonomy-Support and accordingly, your Intinsic motivation for teaching.

So...

Take a moment to list them here

A little nudge if you like...

You already have some in mind...

I teach because _____

Teaching is what makes _____

When I teach _____

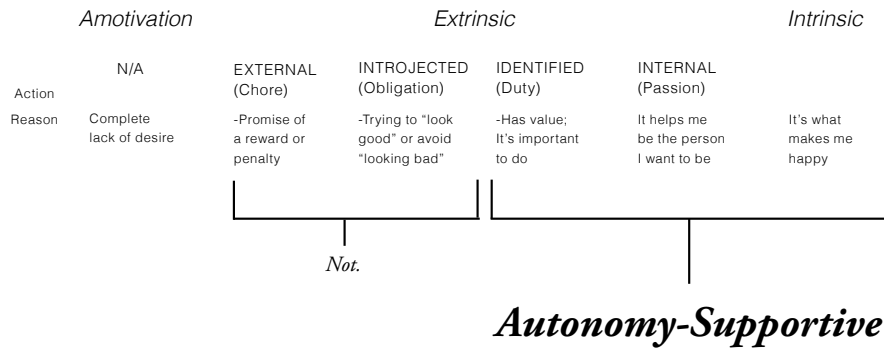
I became a teacher so I could _____

I. Pulled. Up to a _____

The Good, The Bad, And the Self-Determined.

Not all motivation is equally beneficial. Some forms of Extrinsic motivation can actually inhibit autonomy support

The Spectrum of Motivation



When we focus on non autonomy-supportive goals, we inhibit our own intrinsic motivation.

Where do your motivations for teaching fall on the Motivation Spectrum?

Add your *Autonomy-Supportive* reasons to the inside flap to keep them close by while you plan your lessons .

The Thing About Goals.

There are so many categories and strategies for goals
i.e. specific, general, personal, professional, etc.

But, some goals can be more
motivating than others.

If learning objectives are framed as intrinsic
goals, students are more likely to connect
that goal with their personal goals and values,
leading to more intrinsic motivation to engage
in the lessons you have crafted for them.

Relevance & Rationale

Providing an explanation for why an assignment
or lesson is beneficial to students' intrinsic goals
can feel awkward, especially if you don't know
that student very well. Luckily there's no need to
figure out every single student's personal aspi-
rations and values because all students (and
humans) share the same needs for Relatedness,
Autonomy, and Competence.

Some intrinsic goals might seem as though
they're too vague or broad. As it turns out, that
actually just makes it easier for more students to
connect their personal goals with it.

Here are a few examples to get you started.

EXAMPLES

Extrinsic Goals*	Framed Intrinsically
A good job	A good Life
Better test score	Better understanding
More money	More freedom
Improved writing skills	Improved communication

Write down three learning objectives that you teach your students.

Now frame these goals Intrinsically.

Hint: You can start by thinking about what *your* intrinsic motivation is/would be to do these tasks.

*NOTE: Even when people claim to value extrinsic goals (i.e. power, fame, money) they still benefit from Intrinsic Goal framing

Feedback: Giving it.

What students get feedback on, and how it's presented to them greatly affects their intrinsic motivation.

It's helpful to downplay(not sugar-coat) their results, and instead direct comments toward their strategy for performing the task. This will support autonomy for both high and low performing students equally.

Respond to the following scenarios as if they involved one of your students

One of your higher performing students brings you the thesis statement she's been working on for her argumentative essay. Although the thesis statement is well written, it doesn't quite establish the argument she intended. You tell her...

As you're walking around the room, you notice one of your favorite students—although not the highest performing by any means—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he “Doesn't know what to start writing about”. You're on...

Feedback: Taking it.

“This is boring.”

“It’s just busy work.”

“That’s too hard”

“Other teachers don’t make us do this”

—Students of all races and nationalities

Students can seemingly have an endless supply of... “feedback”. By acknowledging, accepting, and empathizing with their feelings, you support their autonomy by letting them know that their voice has been heard and you are an advocate for them. On the other hand being dismissive of negative comments (“Quit complaining and do your work”) can frustrate autonomy support and make students feel as though their views are unvalued.

Respond to the following complaints. Try to acknowledge and empathize with the sentiment, and the student rather than reacting to it

“Shakespeare is boring.” _____

“Bellwork is just
busy work.” _____

“This essay is
too hard.” _____

“Other teachers don’t
make us read this much” _____

A New Plan.

Now that you've had a chance to get your bearings with The New Plan, it's time to put it all together. Grab a lesson plan you've made recently and try "replanning" it with the autonomy-supportive practices in mind.

*Frame the Learning Objective as
an Intrinsic Goal*

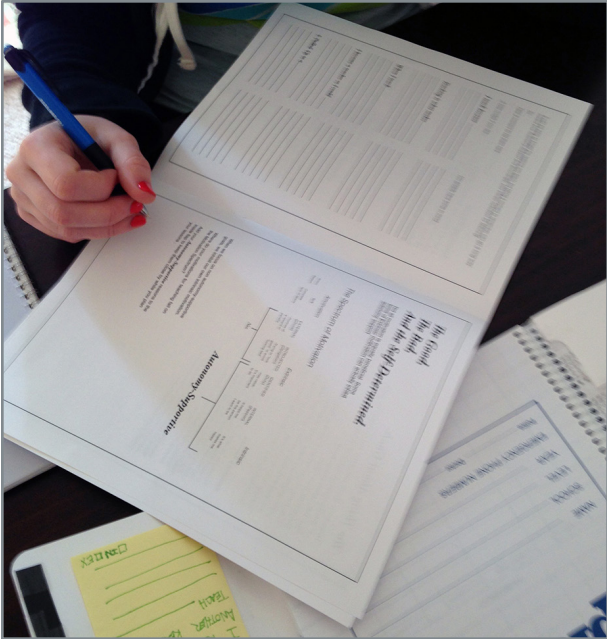
Learning Objective _____

*What would you say (or would
have said) to the struggling
student to support their autonomy?*

*What would you say to the student
that complains to make them feel
their voice is heard?*

*What is YOUR intrinsic motivation
for teaching this particular lesson?*

(15.4) 2nd Prototype Responses



I teach because I care about
the future of children and
I think they're worth the
investment

Teaching is what makes
students feel confident
and empowered.

When I teach

I became a teacher so I could
change the world by
inspiring students to
engage in global conversations.

Recognizing motivation activity

Write down three learning objectives that you teach your students.

Now frame these goals Intrinsically.

Hint: You can start by thinking about what *your* intrinsic motivation is/would be to do these tasks.

SWBAT analyze a text's theme and plot.

... understand how a different demographic feels (empathize) or understand how life was for a different time period or place.

SWBAT identify an author's purpose in a text.

... ability to understand the point of ~~text~~ future texts I encounter on my own.

Note: Compare

Intrinsic goal-framing activity

One of your higher performing students brings you the thesis statement she's been working on for her argumentative essay. Although the thesis statement is well written, it doesn't quite establish the argument she intended. You ~~ask~~ her...

ask to explain ~~the~~ her argument to me in her own words and how she ~~plans~~ plans to support it. Then I tell her I think there's a way to make her thesis more clear. I would guide her in the process of revising.

As you're walking around the room, you notice one of your favorite students—although not the highest performing by any means—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he "Doesn't know what to start writing about". You're on...?

I would bring him a clean sheet of paper and have him just make a list. I would prompt him with questions like "What did you think when..." and "what are your thoughts on the ending." So after he makes puts the information into a less intimidating format, I would help him transition that into an essay.

Giving feedback activity

Respond to the following complaints. Try to acknowledge and empathize with the sentiment, and the student rather than reacting to it

provide example, Nick.

DISMISSIVE, EVEN IN POSITIVE TONE

NOPE

"Shakespeare is boring." Table that thought and we'll revisit after all the sword fighting drug use, and underage sex.

"Bellwork is just busy work." We spend five minutes on grammar everyday so we don't have to do a 3week unit on it! That way you can still leave my class with the ability to express your ideas flawlessly! Lucky you!

"This essay is too hard." _____

"Other teachers don't make us read this much" _____

Receiving feedback activity

Learning Objective Students will be able to write a convincing argumentative essay.

Frame the Learning Objective as an Intrinsic Goal

They need to know this to pass the ECA. They need to pass the ECA to graduate and they need to graduate to amount to anything.

What would you say (or would have said) to the struggling student to support their autonomy?

I would sit down with that student, read ~~and annotate and~~ ~~through a small portion of the~~ ~~text~~ help them make a graphic organizer to get them started and then help them translate that into an essay.

What would you say to the student that complains to make them feel their voice is heard?

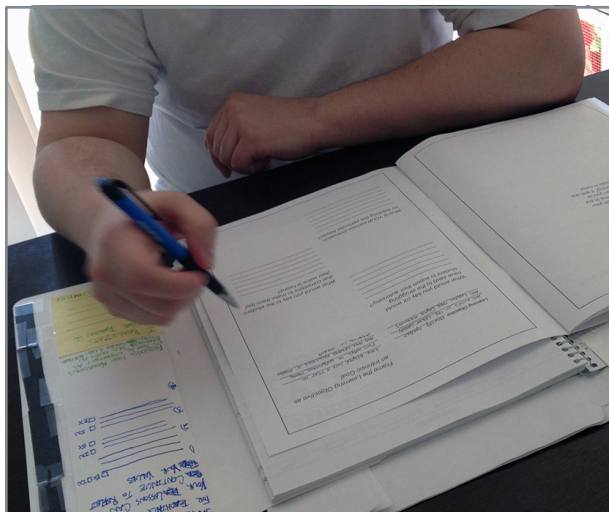
What are you frustrated about specifically?

What is YOUR intrinsic motivation for teaching this particular lesson?

I'm not intrinsically motivated to teach this lesson. Students need to know it because of the ECA.

PROMPT TO CORRECT IT

Review activity



A little nudge if you like...

I teach because I WAS INSPIRED
BY MY TEACHERS TO FOSTER
KNOWLEDGE AND TALENT, AND
HOPE TO DO THE SAME FOR OTHERS

Teaching is what makes _____
STUDENTS THINK OUTSIDE OF
THEIR CONTEXT TO CHALLENGE
THEM TO BECOME BETTER, MORE
EMPATHETIC PEOPLE IN THE WORLD

When I teach _____

I became a teacher so I could _____
ATTEMPT TO EXPLAIN TO OTHERS
HOW TO DO WELL THE THINGS
I FEEL I DO WELL

Recognizing motivation activity

<p>Write down three learning objectives that you teach your students.</p>	<p>Now frame these goals Intrinsically.</p> <p>Hint: You can start by thinking about what your intrinsic motivation is/would be to do these tasks.</p>
<p>IDENTIFY WAYS THE GREAT GATSBY IS A REPRESENTATION OF THE AMERICAN 1920'S/JAZZ AGE</p>	<p>IDENTIFY THE FLAWS OF THE CHARACTERS IN THE GREAT GATSBY IN ORDER TO UNDERSTAND HOW TO AVOID MAKING THESE MISTAKES FOR YOURSELF</p> <p><u>INTRINSIC GOAL</u></p>
<p>DESCRIBE THE RITUALS AND SOCIETY IN UMOVIA FROM THINGS FALL APART</p>	<p>DESCRIBE IDENTIFY ASPECTS OF ANOTHER CULTURE TO EXPAND YOUR WORLDLY CONTEXT</p>
<p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p>

Intrinsic goal-framing activity

<p>and empathize with the sentiment, and the student rather than reacting to it</p>	
<p>"Shakespeare is boring."</p>	<p>LET'S TAKE A SHOT AT REALLY TRYING TO UNDERSTAND FIRST, AND THEN YOU CAN RE-ASSESS THAT LATER.</p>
<p>"Bellwork is just busy work."</p>	<p>IT'S A WAY TO GET YOUR IDEAS OUT BEFORE DISCUSSION - YOU HAVE THINKING POINTS/NOTES!</p>
<p>"This essay is too hard."</p>	<p>IS IT THE IDEAS THAT ARE HARD OR SETTING IT UP? WHAT DO YOU NEED HELP WITH?</p>
<p>"Other teachers don't make us read this much"</p>	<p>THIS IS ENGLISH CLASS - OF COURSE WE HAVE TO READ A LOT!</p>

Receiving feedback activity

Respond to the following scenarios as if they involved one of your students

One of your higher performing students brings you the thesis statement she's been working on for her argumentative essay. Although the thesis statement is well written, it doesn't quite establish the argument she intended. You tell her...

THE JUSTIFICATION, SUPPORT, AND DEFENSE OF THE ARGUMENT CAN BE REITERATED IN OTHER WAYS TO BE PRESENTED LATER ON. BEFORE THAT CAN HAPPEN, YOUR ARGUMENT HAS TO BE STATED CLEARLY. (QUESTIONING - EXAMPLE:) "WHAT DO YOU WANT PEOPLE TO CONSIDER THINKING AND/OR DOING?" "WHAT IS THE COUNTER-ARGUMENT?, HOW DO WE BEST SET OURSELVES TO COMBAT IT?"

As you're walking around the room, you notice one of your favorite students—although not the highest performing by any means—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he "Doesn't know what to start writing about". You're on...

I WOULD REFER THIS STUDENT TO SOME OF THE FRAMEWORK FROM BEFORE THE BOOK/NOVEL - HISTORICAL BACKGROUND, THE AUTHOR, BIG TERMS, THEMES, OR CONCEPTS, ETC.

THEN I WOULD HAVE THEM GO THROUGH AND GIVE ME SOME EXAMPLES ON HOW THEY UNDERSTAND THOSE THINGS BETTER AFTER READING.

Giving feedback activity

5.2

Frame the Learning Objective as an Intrinsic Goal

Learning Objective IDENTIFY SYMBOLS AND MOTIFS IN THE GREAT GATSBY AND EXPLAIN THEIR DEEPER MEANINGS

LOOK DEEPER INTO A TEXT TO FIND WAYS TO UNDERSTAND THEM AND HAVE GREATER KNOWLEDGE OF HIDDEN MEANING IN MEDIA

What would you say (or would have said) to the struggling student to support their autonomy?

FINDING A SYMBOL/MOTIF IS THE FIRST PART, BUT UNDERSTANDING WHAT IT MEANS IS THE NEXT, AND HARDEST, PART. USE CONTEXT TO HELP - HOW DO THE SURROUNDING WORDS DEVELOP A MOOD THAT TELLS YOU HOW YOU SHOULD FEEL ABOUT THIS SYMBOL/MOTIF.

• NOT QUITE

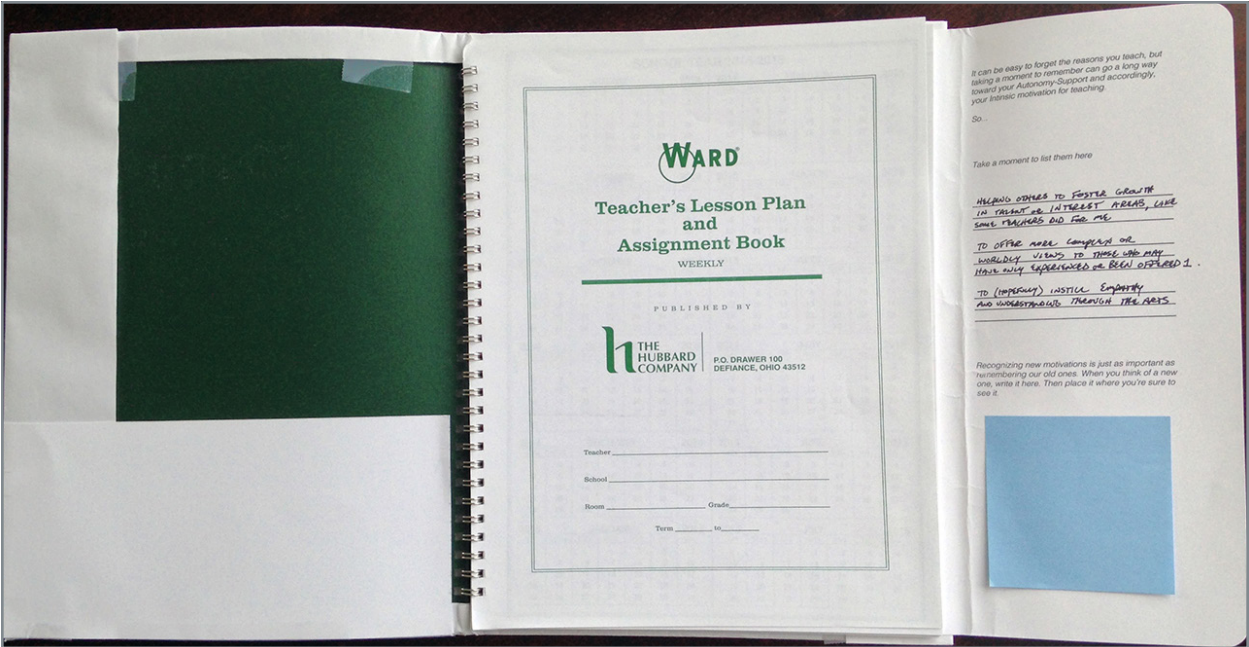
• GET TO WHY THIS WOULD HELP THEM ACHIEVE THEIR PERSONAL GOALS

YES GOOD PROVIDES STRATEGY

What would you say to the student

Review activity

(15.5) 3rd Prototype



A New Plan...

This tool kit will help you prepare lessons that will foster your students' intrinsic motivations, as well as your own.

What is Intrinsic Motivation?

Intrinsic motivation is what drives people to intentionally engage in activities of their choosing. Intrinsic motivation causes people to explore the world around them, seek new knowledge, and establish meaningful relationships.

What is Intrinsic Motivation made of?

Our intrinsic motivation is determined by three basic psychological needs: relatedness, competence and autonomy. These needs can be met and fostered through autonomy-supportive behavior.

Relatedness

People need to feel a sense of belonging in order to experience relatedness. Feelings of relatedness can be fostered through the development of empathetic, caring, and respectful relationships.

Competence

When people think they're good at something, they feel competence in their ability to perform. Feelings of competence are improved by providing an optimal challenge and giving feedback on the process someone used to complete the task.

Autonomy

People feel autonomous when they view their decisions to act as voluntary. They also need to believe that they had a choice of whether or not to act and in what way. Autonomy is enhanced when people are provided with choice and meaningful rationale to take action.

Why is Autonomy-Support helpful?

Over the past 30 years, a excess of research on Intrinsic motivation in the classroom has proven autonomy-supportive teachers have students with higher intrinsic motivation, which leads to increased student performance, fewer behavioral issues, and greater overall well-being.

What are Autonomy-Supportive behaviors?

A bit of a misnomer, Autonomy-Support refers to actions someone can take to improve all three of the basic psychological needs: Relatedness, Competence, and of course Autonomy.

Allowing Criticism

Allowing, accepting, and empathizing with student criticisms let's them know that their opinions are valued or at the very least tolerated.

Giving Feedback

When giving students feedback on performance, underplaying their results and keeping the focus on their strategy for completing the task will provide more autonomy-support.

Goal-Framing

Autonomy is enhanced when people are provided with choice and meaningful rationale to take action.

Your rhymes and reasons.

Not every reason we have for doing something we love is meaningful or interesting.

Sometimes we want to look impressive to others, sometimes we do things to avoid punishment.

When you know what your motivations are and why you have them, you can learn to refocus them.

List something you do as a teacher that falls under each type of motivation.

External Motivation:

Doing something SOLELY to receive a reward, or to avoid being punished.

Feels like a Chore.

(show up to work to avoid being fired)

Introjected Motivation:

Doing something to look good/impressive to others, or to avoiding embarrassment/shame.

Feels like an Obligation.

(shaparoning a dance to look good to admin.)

Identified Motivation:

Doing something because you personally believe it's the right thing to do.

Feels like a Duty.

(calling the police when you witness an accident)

External Motivation:

Doing something that helps you become the type of person you want to be.

Feels like a Passion.

(molding young minds for the future)

Intrinsic Motivation:

Doing something that makes you happy, no matter the outcome.

Feels like a Purpose.

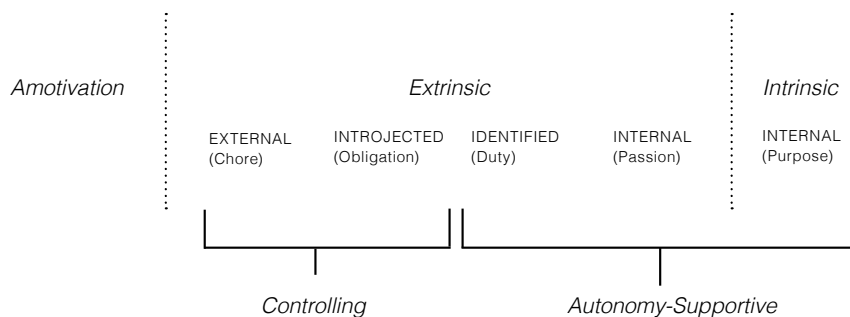
(helping others reach their potential)

*Go to the inside cover flap...
please and thank you*

The Good, The Bad, And the Self-Determined.

Motivation is a fickle creature. When our reasons for doing things are tied to more extrinsic factors like acquiring wealth, impressing others, or avoiding punishment, we end up diminishing the value of the task itself and therefore feel less inclined to participate.

These types of goals and other behaviors that frustrate our basic needs and diminish our intrinsic motivation are **Controlling**.

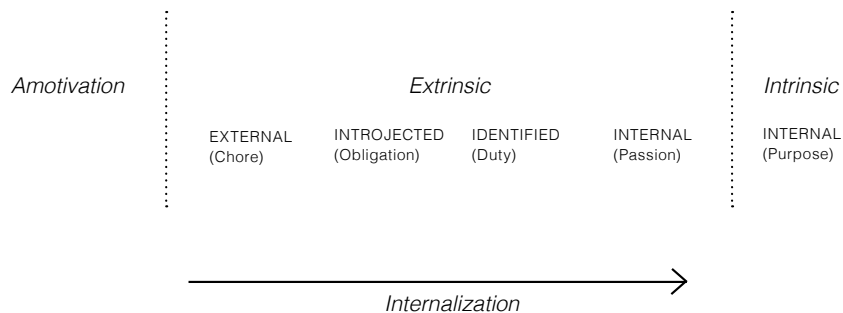


Autonomy-Support and Internalization.

Luckily, it also works in the opposite direction. When we try to focus on more intrinsic reasons for doing something like taking care of loved ones, contributing to a cause greater than ourselves, or just leaving the world a better place than we found it, a funny thing happens: We **Internalize** those reasons and they become our own.

Chores become Obligations...
Obligations become Duties...
Duties become Passions...
Passions and Duties feed our Purpose.

Internalization of extrinsic motivations is facilitated through autonomy-supportive behaviors like intrinsic goal framing, giving effectance-based feedback to students, and allowing students to express criticism.



The Thing About Goals.

Supports: Autonomy

There are so many categories and strategies for goals i.e. specific, general, personal, professional, etc.

But, some goals can be more motivating than others.

If learning objectives are framed as intrinsic goals, students are more likely to connect that goal with their personal goals and values, leading to more intrinsic motivation to engage in the lessons you have crafted for them.

Relevance & Rationale

Providing an explanation for why an assignment or lesson is beneficial to students' intrinsic goals can feel awkward, especially if you don't know that student very well. Luckily there's no need to figure out every single student's personal aspirations and values because all students (and humans) share the same needs for Relatedness, Autonomy, and Competence.

Some intrinsic goals might seem as though they're too vague or broad. As it turns out, that actually just makes it easier for more students to connect their personal goals with it.

Examples

Extrinsic Goals*

Framed Intrinsically

A good job

A good Life

Better test score

Better understanding

More money

More freedom

Improved
writing skills

Improved
communication

Write down three learning objectives
that you teach your students.

Now frame these goals Intrinsically.

Hint: You can start by thinking about what *your*
intrinsic motivation is/would be to do these tasks.

*NOTE: Even when people claim to value extrinsic goals (i.e.
power, fame, money) they still benefit from Intrinsic Goal
framing

Feedback: Giving it.

Supports: Competence

What students get feedback on, and how it's presented to them greatly affects their intrinsic motivation.

It's helpful to downplay(not sugar-coat) their results, and instead direct comments toward their strategy for performing the task. This will support autonomy for both high and low performing students equally.

Respond to the following scenarios as if they involved one of your students

One of your higher performing students brings you the thesis statement she's been working on for her argumentative essay. Although the thesis statement is well written, it doesn't quite establish the argument she intended. You tell her...

As you're walking around the room, you notice one of your favorite students—although not the highest performing by any means—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he “Doesn't know what to start writing about”. You say to him...

Feedback: Taking it.

Supports: Relatedness

Students can seemingly give an endless supply of... “feedback”. By acknowledging, accepting, and empathizing with their feelings, you support their autonomy by letting them know that their voice has been heard and you are an advocate for them.

On the other hand, being dismissive or defensive over negative comments (“Quit complaining and do your work”) can frustrate autonomy support and make students feel as though their views are unvalued and cause tensions to rise.

Diffuse the following complaints. Try to acknowledge their sentiment without being dismissive of their feelings

“This is boring.”

“It’s just busy work.”

“That’s too hard.”

“Other teachers don’t make us do this.”

—Students everywhere

“I already saw the movie, so reading the book feels like a waste of time”, said one of your highest performing and most apathetic students.

“This is the same assignment as yesterday”, moaned one of your under-performing, but most hard-working students.

The New Plan.

Now that you've had a chance to get your bearings with The New Plan, it's time to put it all together. Grab a lesson plan you've made recently and try "replanning" it with the autonomy-supportive practices in mind.

*Frame the Learning Objective as
an Intrinsic Goal*

Learning Objective _____

*What would you say to the
struggling student to suport their
autonomy?*

*What would you say to the student
with valid criticism to make them
feel their voice is heard?*

*What is YOUR intrinsic motivation
for teaching this particular lesson?*

(15.6) 3rd Prototype Responses



<p>External Motivation: Doing something SOLELY to receive a reward, or to avoid being punished. Feels like a Chore. (show up to work to avoid being fired)</p> <p><u>Hanging standards. YUP.</u></p>	<p>Introjected Motivation: Doing something to look good/impressive to others, or to avoiding embarrassment/shame. Feels like an Obligation. (shaparoning a dance to look good to admin.)</p> <p><u>YEP Voluntering for 100 people/100 min.</u></p>
<p>Identified Motivation: Doing something because you personally believe it's the right thing to do. Feels like a Duty. (calling the police when you witness an accident)</p> <p><u>Staying after school to work & with students YEP</u></p>	<p>External Motivation: Doing somthing that helps you become the type of person you want to be. Feels like a Passion. (molding young minds for the future) YEP.</p> <p><u>Reading researh to be a better teacher</u></p>
<p>Intrinsic Motivation: Doing something that makes you happy, no matter the outcome. Feels like a Purpose. (helping others reach their potential)</p> <p><u>Encouraging students and helping them build their academic confidence. YEP</u></p>	

Recognizing motivation activity

It can be easy to forget the reasons you teach, but taking a moment to remember can go a long way toward your Autonomy-Support and accordingly, your Intrinsic motivation for teaching.

So... **OK TO BE CHEESEY, JUST AS LONG AS IT'S GENUINE. THIS IS JUST FOR YOU.**

Take a moment to list them here

- Because I believe that providing a good education to minorities is a way to achieve social justice.
- Because a well-designed curriculum can change the way a student looks at the world.
- Because every student deserves to have an adult care about them.

Write down three learning objectives that you teach your students.

Now frame these goals Intrinsically.

Hint: You can start by thinking about what *your* intrinsic motivation is/would be to do these tasks.

SWBAT use proper grammar and mechanics.

→ They'll be able to communicate clearly and confidently.

SWBAT identify an author's argument

→ Better understand the messages they receive.

SWBAT identify a story's theme.

→ Make connections between life's events in order to better understand the world.

**NOT
QUOTE
EXAMPLES**

Intrinsic goal-framing activity

One of your higher performing students brings you the thesis statement she's been working on for her argumentative essay. Although the thesis statement is well written, it doesn't quite establish the argument she intended. You tell her...

WRITE THE ACTUAL WORDS

I would ask her what she intends to argue and how she plans to support it. Then I would explain that her current thesis statement needs to be adjusted in order to do that.

As you're walking around the room, you notice one of your favorite students—although not the highest performing by any means—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he “Doesn’t know what to start writing about”. You say to him...

I would ask him what he thought of the book or what his favorite part was. I would have a brief conversation with him about it and then tell him to write it down.

Giving Feedback activity

COMMON ANSWER

“I already saw the movie, so reading the book feels like a waste of time”, said one of your highest performing and most apathetic students.

But some of the best parts were left out of the movie! Trust me, if you liked the movie, you'll love the book!

COMMON ANSWER

“This is the same assignment as yesterday”, moaned one of your under-performing, but most hard-working students.

But because you did it yesterday, it'll be so much easier today!

Receiving Feedback activity

Learning Objective SWBAT analyze a literary text.

What would you say to the struggling student to support their autonomy?
I would use scaffolding and what they already know to help them further understand the text.

What is YOUR intrinsic motivation for teaching this particular lesson?
I want students to be successful in life.

Frame the Learning Objective as an Intrinsic Goal
Gain a better understanding of human nature, and therefore be able to predict and understand behavior.

What would you say to the student with valid criticism to make them feel their voice is heard?
"That's an interesting point, I'll have to take that into account for next time."

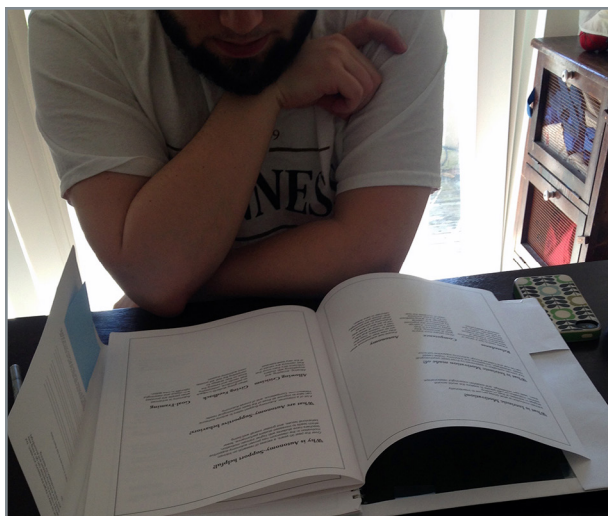
"Not QUITE"

"Not QUITE" YES.

MAYBE FULL BREAKDOWN FOR

EXT INTRO
ID INT. INTRIN.

Review activity



When you know what your motivations are and why you have them, you can learn to refocus them.

List something you do as a teacher that falls under each type of motivation.

<p>TASK</p> <p>External Motivation: Doing something SOLELY to receive a reward, or to avoid being punished. Feels like a Chore. (show up to work to avoid being fired) YEP.</p> <p><u>SIGN-IN IN THE MAIN OFFICE</u> <u>M-F BY 7:45 AM.</u></p>	<p>TASK</p> <p>Introjected Motivation: Doing something to look good/impressive to others, or to avoid embarrassment/shame. Feels like an Obligation. (shaparoning a dance to look good to admin.)</p> <p>chaperone YEP.</p> <p><u>MONITORING HALLWAYS BEFORE/AFTER</u> <u>SCHOOL AND IN BETWEEN CLASS</u></p>
<p>TASK</p> <p>Identified Motivation: Doing something because you personally believe it's the right thing to do. Feels like a Duty. (calling the police when you witness an accident) YEP.</p> <p><u>CORRECTING INAPPROPRIATE BEHAVIOR +</u> <u>DISCOURAGING GOSSIP/BULLYING QUICKLY</u></p>	<p>TASK</p> <p>External Motivation: Doing something that helps you become the type of person you want to be. Feels like a Passion. (molding young minds for the future) YEP.</p> <p><u>OPENING STUDENTS EYES TO OTHER</u> <u>WAYS OF LIVING AND THINKING</u></p>
<p>TASK</p> <p>Intrinsic Motivation: Doing something that makes you happy, no matter the outcome. Feels like a Purpose. (helping others reach their potential) YEP.</p> <p><u>DISCUSSING THE VALUE</u> <u>AND MEANING OF ART AND</u></p>	

Recognizing motivation activity

STUDENTS WILL APPLY THE HERO'S JOURNEY TO A MODERN TALE TO SEE HOW IT IS STILL USED.	STUDENTS WILL EXPLORE THE WAYS THAT COMMON MEDIA CAN BE CONNECTED TO STORYTELLING FROM THE PAST TO UNDERSTAND HOW THEIR ENTERTAINMENT IS MADE.	"NOT QUOTE"
STUDENTS WILL UPDATE A SCRIPT TO INCLUDE MODERN ELEMENTS AND MAKE IT MORE RELEVANT	STUDENTS WILL ANALYZE AND DISCUSS THE WAYS THE WORLD HAS CHANGED SINCE (YEAR OF PUBLICATION)	"NOT QUOTE"
STUDENTS WILL COMPARE TWO POSTMODERN NOVELS TO DETERMINE SIMILAR ASPECTS OF STRUCTURE AND THEME	STUDENTS WILL IDENTIFY COMMON ASPECTS IN WHAT THEY READ TO UNDERSTAND HOW WRITING HAS CHANGED.	"NOT QUOTE"

Intrinsic goal-framing activity

<p>One of your higher performing students brings you the thesis statement she's been working on for her argumentative essay. Although the thesis statement is well written, it doesn't quite establish the argument she intended. You tell her...</p> <p>TO FRAME THE ARGUMENT IN A WAY THAT COMBATS THE STRONGEST COUNTER ARGUMENT(S), AND SEE IF SHE HAD CONSIDERED THAT BEFORE MOVING ON.</p> <p>As you're walking around the room, you notice one of your favorite students—although not the highest performing by any means—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he "Doesn't know what to start writing about". You say to him...</p> <p>TO THINK BACK TO THE START OF THE BOOK AND THINK OF WHERE HE WAS AT BACK THEN; I WOULD TRY TO FRAME IT AS A WAY OF THE STUDENT HIMSELF ANALYZING WHAT HE HAS LEARNED OVER THE COURSE OF READING.</p>	
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Giving feedback activity

"I already saw the movie, so reading the book feels like a waste of time", said one of your highest performing and most apathetic students.

MOVIES HAVE TO OFTEN COMPENSATE
FOR A LIMITED AMOUNT OF TIME;
APPROACH THE BOOK AS A TASK OF
DISCOVERING WHAT HAD TO BE REMOVED
OR CHANGED BASED ON THE MEDIA.

"This is the same assignment as yesterday", moaned one of your under-performing, but most hard-working students.

COMMON RESPONSE

PRACTICE MAKES PERFECT -
JUST A FEW MORE INSTANCES
OF THIS AND WE'LL MOVE ON TO
SOMETHING DIFFERENT SOON.

Receiving feedback activity

List something you do as a teacher that falls under each type of motivation.

<p>External Motivation: Doing something SOLELY to receive a reward, or to avoid being punished. Feels like a Chore. (show up to work to avoid being fired)</p> <p>Love cash. work out</p>	<p>Introjected Motivation: Doing something to look good/impressive to others, or to avoid embarrassment/shame. Feels like an Obligation. (shaparoning a dance to look good to admin.)</p>
<p>Identified Motivation: Doing something because you personally believe it's the right thing to do. Feels like a Duty. (calling the police when you witness an accident)</p> <p>my dishes</p>	<p>External Motivation: Doing something that helps you become the type of person you want to be. Feels like a Passion. (molding young minds for the future)</p> <p>work out</p>
<p>Intrinsic Motivation: Doing something that makes you happy, no matter the outcome. Feels like a Purpose. (helping others reach their potential)</p> <p>ah-hah moment</p>	

Take a moment to list them here

make a diff.

my math struggle

gma proud

loved teachers

One of your higher performing students brings you the thesis statement she's been working on for her argumentative essay. Although the thesis statement is well written, it doesn't quite establish the argument she intended. You tell her...

What are the 3 things you really plan to argue!? Those go in your thesis.

As you're walking around the room, you notice one of your favorite students—although not the highest performing by any means—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he "Doesn't know what to start writing about". You say to him...

I'd give him a sentence starter + help him bullet point his answers.

Giving feedback activity

Write down three learning objectives that you teach your students.

Now frame these goals intrinsically.

Hint: You can start by thinking about what *your* intrinsic motivation is/would be to do these tasks.

To identify persuasion

See when you're being persuaded as a parent/boss

To skim text

To quickly get through tasks

To develop an argument

To get your way

*NOTE: Even when people claim to value extrinsic goals (i.e. power, fame, money) they still benefit from Intrinsic Goal framing

Intrinsic goal-framing activity

Feedback: Taking it.

Supports: Relatedness

Students can seemingly give an endless supply of... "feedback". By acknowledging, accepting, and empathizing with their feelings, you support their autonomy by letting them know that their voice has been heard and you are an advocate for them.

On the other hand, being dismissive or defensive over negative comments ("Quit complaining and do your work") can frustrate autonomy support and make students feel as though their views are unvalued and cause tensions to rise.

Diffuse the following complaints. Try to acknowledge their sentiment without being dismissive of their feelings

"I already saw the movie, so reading the book feels like a waste of time", said one of your highest performing and most apathetic students.

"This is boring."

"It's just busy work."

"That's too hard."

"Other teachers don't make us do this."

—Students everywhere

Common

I But you didn't
pay close attention
last time
quit them to see.

Common

"This is the same assignment as yesterday", moaned one of your under-performing, but most hard-working students.

So well be
twice as good
at the task. ;)

Receiving feedback activity

Learning Objective

I can identify persuaders in speeches.

Frame the Learning Objective as an Intrinsic Goal

I can see through someone persuading me.

Way closer
"Just say it"

What would you say to the struggling student to support their autonomy?

Haven't you been played before? Let's figure out how to determine that I see through it!

What would you say to the student with valid criticism to make them feel their voice is heard?

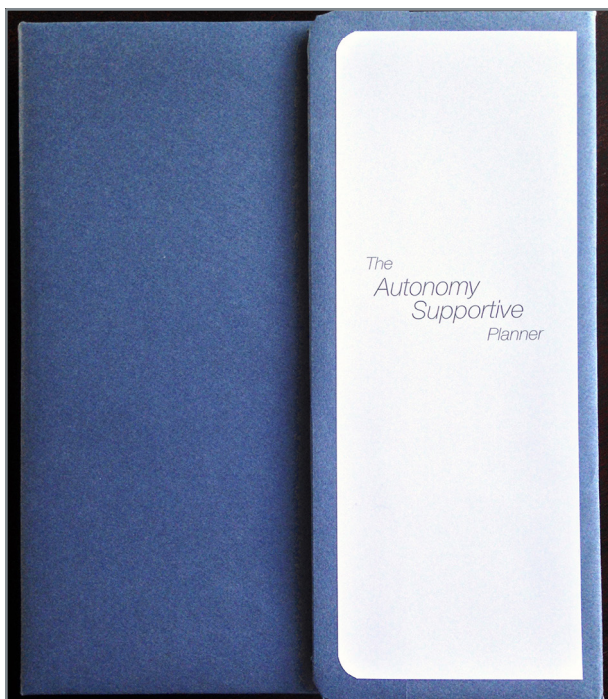
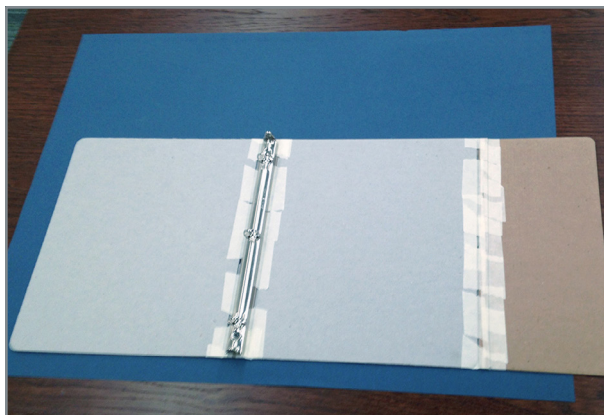
I get you think this is pointless, but this has everyday value!

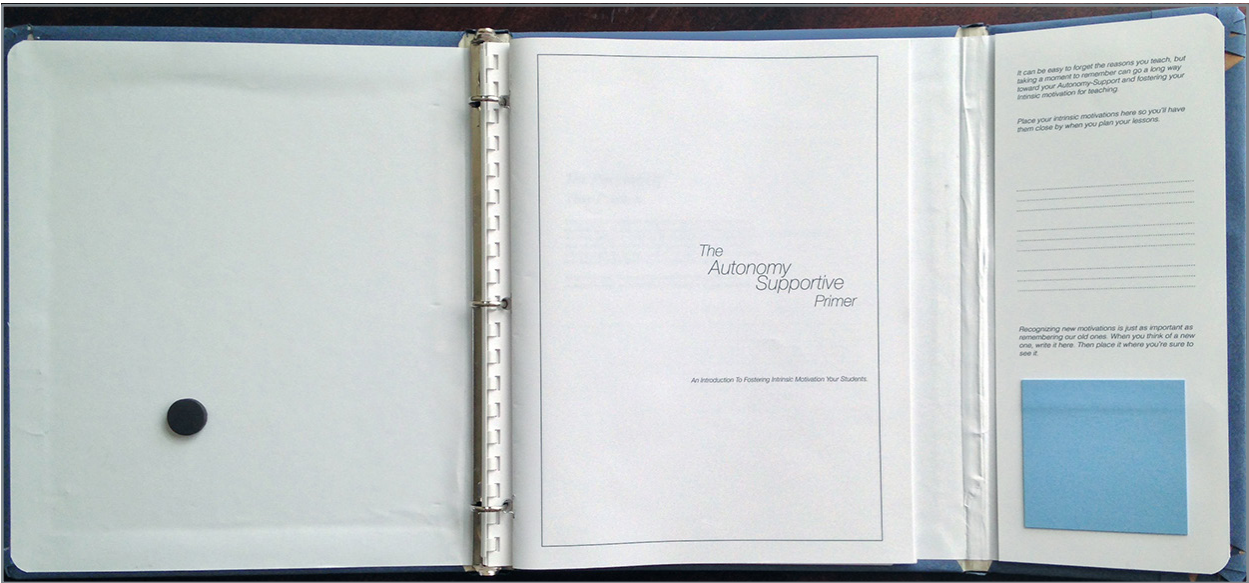
What is YOUR intrinsic motivation for teaching this particular lesson?

Fun technology to get point across.

Review activity

(15.7) Final Prototype





WEEK OF: 12 13

SUBJECT:

M					Learning Objective From this Week:	M
T					Practical Skill of Learning Objective:	T
W					Why Skill Would Improve a Life:	W
Th					Complaint from Students:	Th
F					My Response to Complaint:	F

Planner pages

*The
Autonomy
Supportive
Primer*

An Introduction To Fostering Intrinsic Motivation Your Students.

The Purpose Of This Primer.

This primer first introduces ideas and concepts stemming from a motivational framework called Self-Determination Theory (SDT). It will show you how to recognize different types of motivation and their meaning. The primer will then guide you through a series of activities designed to help you start integrating these concepts into your existing lesson plans and/or lesson-planning process.

All of the concepts and activities included in this primer are designed to help you foster intrinsic motivation in your students.

What is Intrinsic Motivation?

Intrinsic motivation is what drives people to intentionally engage in activities of their choosing. Intrinsic motivation causes people to explore the world around them, seek new knowledge, and establish meaningful relationships.

What is Intrinsic Motivation made of?

Our intrinsic motivation is determined by three basic psychological needs: relatedness, competence and autonomy.

Relatedness

People need to feel a sense of belonging in order to experience relatedness. Feelings of relatedness can be fostered through the development of empathetic, caring, and respectful relationships.

Competence

When people think they're good at something, they feel competent in their ability to perform. Feelings of competence are improved by providing an optimal challenge and giving feedback on the process someone used to complete the task.

Autonomy

People feel autonomous when they view their decisions to act as voluntary. They also need to believe that they had a choice of whether or not to act and in what manner. Autonomy is enhanced when people are provided with choice and meaningful rationale to take action.

Why Autonomy-Support?

Over the past 30 years, an excess of research on Intrinsic motivation in the classroom has proven autonomy-supportive teachers have students with higher intrinsic motivation, which leads to increased student performance, fewer behavioral issues, and greater overall well-being.

What are Autonomy-Supportive behaviors?

A bit of a misnomer, Autonomy-Support refers to actions someone can take to improve all three of the basic psychological needs.

Allowing Criticism

Allowing, accepting, and empathizing with student criticisms let's students know that their opinions are valued or at the very least tolerated.

Psychological Need:
Relatedness

Autonomy-Supportive Behavior:
Allowing Criticism

Giving Feedback

When giving students feedback on performance, underplaying their results and keeping the focus on their strategy for completing the task will provide more autonomy-support.

Psychological Need:
Competence

Autonomy-Supportive Behavior:
Giving Feedback

Goal-Framing

Refocusing students' performance objectives as intrinsic goals helps students see uninteresting tasks as personally relevant and valuable.

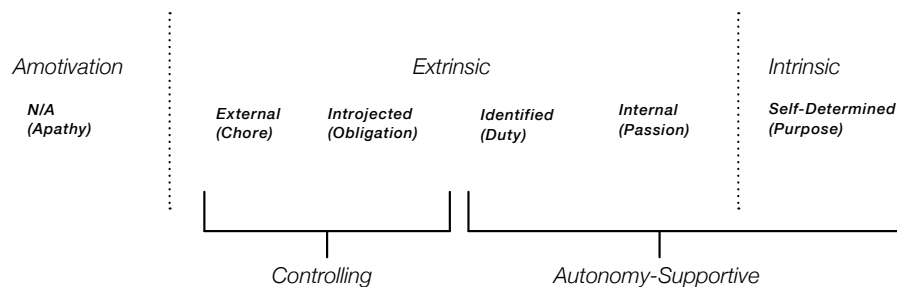
Psychological Need:
Autonomy

Autonomy-Supportive Behavior:
Goal-Framing

The Good, The Bad, And The Self-Determined.

Motivation is a fickle creature. When our reasons for doing things are tied to more extrinsic factors like acquiring wealth, impressing others, or avoiding punishment, we end up diminishing the value of the task itself and therefore feel less inclined to participate.

These types of goals and other behaviors that frustrate our basic needs and diminish our intrinsic motivation are **Controlling**.



Extrinsic Goals*

A good job

Better test score

More money

Improved writing skills

Intrinsic Goals

A good Life

Increased skill

More freedom

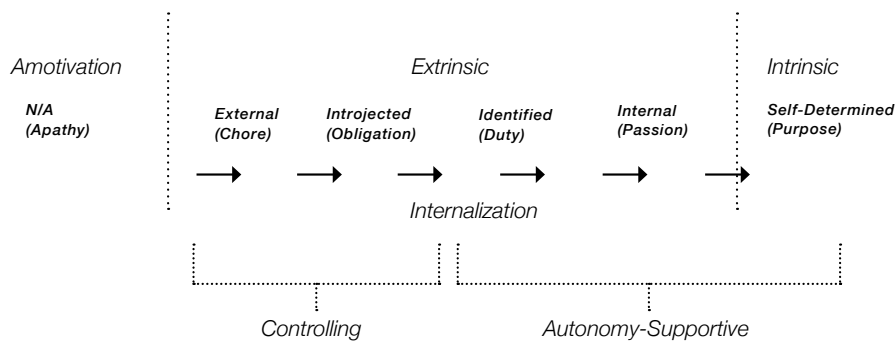
Improved communication

**Note: Even when people claim to value extrinsic goals (i.e. power, fame, money) they still benefit from Intrinsic Goal framing*

Autonomy-Support And Internalization.

Luckily, it also works in the opposite direction. When we try to focus on more intrinsic reasons for doing something like taking care of loved ones, contributing to a cause greater than ourselves, or just leaving the world a better place than we found it, a funny thing happens: We **Internalize** those reasons and they start to become our own.

Chores move toward Obligations...
Obligations move toward Duties...
Duties move toward Passions...
Passions and Duties feed our Purpose.



Internalization of extrinsic motivators is facilitated through autonomy-supportive behaviors like intrinsic goal framing, giving strategy-based feedback to students, and allowing students to voice negative criticism.

Continue to Warm-up Activity...

Warm-up Activity: Recognizing Motivation

*What You Do &
Why You Do It.*

Not every reason we have for doing something is meaningful or interesting. Sometimes we want to look impressive to others, or sometimes we do things to avoid punishment. When you know what your motivations are and why you have them, you can learn to refocus them.

For each of the following types of motivation, identify something you do as a teacher that fits. No two should be the same.

External:

Doing something
SOLELY to receive
a reward, or to
avoid punishment.

*Feels like a Chore.
(show up to work to
avoid being fired)*

.....
.....

Introjected:

Doing something
to look impressive
to others, or to
avoid shame.

*Feels like an Obligation.
(monitoring hallways
before/after class)*

.....
.....

Identified:

Doing something
because you
personally believe it's
the right thing to do.

*Feels like a Duty.
(discouraging gossip
and bullying)*

.....
.....

Internal:

Doing something that
helps you become
the type of person
you want to be.

*Feels like a Passion.
(giving students a
new perspective)*

.....
.....

Intrinsic:

Doing something that
makes you happy, no
matter the outcome.

*Feels like a Purpose.
(helping others reach
their potential)*

.....
.....
.....
.....

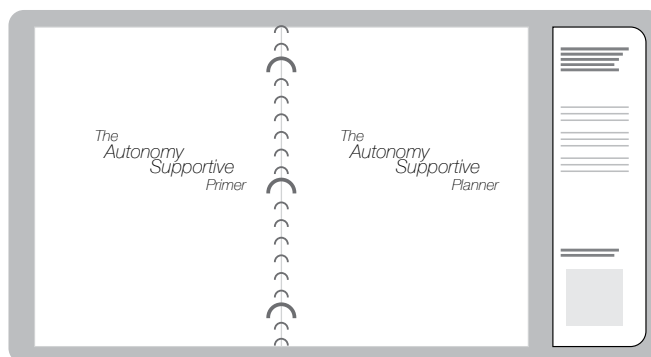
Warm-up Activity: Recognizing Motivation

Using Your Binder As A Reminder.

With all the things a teacher needs to think about, remembering *why* you became a teacher, or *why* you enjoy teaching can get lost in the shuffle.

That's why this tool has a space dedicated for *your* intrinsic motivations for teaching.

Now go to the inside cover flap and write down your intrinsic motivations for teaching.



You will now be guided through a series of activities to help you start integrating autonomy-supportive behaviors in your lesson plans.

Continue to Activity 1: Supporting Autonomy...

Activity 1: Supporting Autonomy

Connecting Lessons To Intrinsic Goals.

If learning objectives are framed as intrinsic goals, students are more likely to connect that goal with their personal goals and values, leading to more intrinsic motivation to engage in the lessons you have crafted for them.

Translating learning objectives to intrinsic goals can feel awkward. A helpful strategy for determining appropriate intrinsic goals for your students, is to start with a learning objective. Then think of a practical skill developed from mastering that objective. Finally, try to describe why someone's life might be improved (generally) by having or using that skill. This will be the intrinsic goal you can use to frame the learning objective.

There's no need to figure out every students' personal interests and aspirations because everyone (including you) benefits from intrinsic goal framing.

Some intrinsic goals might seem as though they're too vague or broad. As it turns out, that actually makes it easier for more students to connect it to their personal goals and interests.

Review the following example of intrinsic goal framing.

Example

Learning Objective*:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to analyze a text's theme and plot.	→ Ability to empathize with people different from themselves.	→ Having more meaningful and longer lasting relationships

Now try connecting the following learning objectives to Intrinsic Goals

Learning Objective:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to identify an author's purpose in a text.	→	→
Students will be able to develop an argument.	→	→

Now start with a Learning Objective YOU taught recently in YOUR classroom.

.....	→	→
.....	
.....	

***Note:** Although this primer suggests starting with Learning Objectives, you could start with Unit Objectives, or Project Goals.

Continue to Activity 2: Supporting Competence...

Activity 2: Supporting Competence

Giving Feedback To Students.

What students get feedback on, and how it's presented to them greatly affects their intrinsic motivation.

Most teachers already know that it's more helpful to give students strategies to scaffold the task, and not to focus on their poor performance. Incidentally, focusing feedback this way can be helpful in supporting students' basic need of competence.

However, through no fault of their own, teachers might give feedback in a controlling way (i.e. "do it this way instead", "don't do it that way", "you should do it this way"). Short, prescriptive phrases like these undermine students' feelings of competence.

However, when teachers provide multiple strategies or are more suggestive (i.e. "you could try this", "there a a couple of things you could do", "here a few strategies for that") students can determine which way is right for them through exploration, personal preference, or both. This simple phrasing adjustment will help support students' feelings of competence.

Activity 3: Supporting Relatedness

Allowing Criticism From Students.

Students regularly provide teachers with feedback in the form of complaints (see right). Complaints from students are unavoidable because the nature of a classroom includes rules and requirements that go against students' interests and preferences.

A common and understandable strategy teachers use to deal with student complaints includes dismissing these comments or asserting authority through defensive language (i.e. "Quit complaining and do your work", "I wouldn't have you do this if I didn't think it was relevant", "this is what we're doing today").

Although comments like these can be effective at preventing further complaints from students temporarily, they also frustrate autonomy-support because they make students feel as though the assignment is more important than they are.

A more autonomy-supportive strategy would be to acknowledge or accept the student's comment. This helps the student feel that their opinion is valued even if the teacher doesn't make any changes to the assignment of task based on the comment received.

"This is boring."

"It's just busy work."

"This assignment is too hard."

"Other teachers don't make us do this."

—Students everywhere

Read the following example scenario and responses.

Example Scenario

"I already saw the movie, so reading the book feels like a waste of time", said one of your highest performing and most apathetic students.

Common Response

"I bet you didn't pay close attention! That's why we're reading it as a class."

Undermines student ability;
devalues opinion

More Autonomy-Supportive Response

"I've seen the movie too."

Acknowledges sentiment;
Not defensive

Respond to the following complaint.

Try to acknowledge or accept their sentiment without being dismissive or getting defensive (i.e. counter arguing the statement).

"This is the same assignment as yesterday", moaned one of your under-performing, but most hard-working students.

.....

.....

.....

.....

"Shakespeare is boring", whined one of your enthusiastic, and more sociable students.

.....

.....

.....

.....

Continue to Activity 4: Putting it all together...

All Together Now.

Now that you've had a chance to get your bearings with more autonomy-supportive strategies, it's time to put them all together. You might want to grab a recent lesson plan to give yourself a frame of reference for the kinds of complaints you might receive and what students struggle with.

Start with a recent Learning Objective from a lesson you taught your class. Then respond to the prompts as if they pertained to that lesson.

Refer to Activity 1 if needed

Learning Objective:

Practical skill developed from mastery of objective:

Why life would be improved by having this skill:

.....	→	→
.....	
.....	

Refer to Activity 2 if needed

What feedback would you give to the student that has trouble getting started with the assignment ?

Refer to Activity 3 if needed

"Other teachers don't make us do this", complained one of your students. You would say...

“	“

”	”

Refer to Warm-up Activity if needed

*What is **YOUR** intrinsic motivation for teaching this particular lesson?*

.....

.....

.....

.....

.....

.....

(15.8) Final Prototype User Test Responses

For each of the following types of motivation, identify something you do as a teacher that fits. No two should be the same.

External: Doing something SOLELY to receive a reward, or to avoid punishment. <i>Feels like a Chore.</i> (show up to work to avoid being fired)	Introjected: Doing something to look impressive to others, or to avoid shame. <i>Feels like an Obligation.</i> (monitoring hallways before/after class)
teaching summer school	dress up daily
Identified: Doing something because you personally believe it's the right thing to do. <i>Feels like a Duty.</i> (discouraging gossip and bullying)	Internal: Doing something that helps you become the type of person you want to be. <i>Feels like a Passion.</i> (giving students a new perspective)
helping new teachers	performing in school productions recycling in the classroom
Intrinsic: Doing something that makes you happy, no matter the outcome. <i>Feels like a Purpose.</i> (helping others reach their potential)	
Sponsoring a club	

Warm-up activity

toward your Autonomy-Support and fostering your intrinsic motivation for teaching.

Place your intrinsic motivations here so you'll have them close by when you plan your lessons.

Introduce young people to the beauty of words.

Help create positive members of future society.

Improve the lives of those around me.

Binder reminder activity

Learning Objective:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to identify an author's purpose in a text.	→ Ability to recognize behaviors.	→ Better ability to read the motivations of self + others.
Students will be able to develop an argument.	→ Ability to persuade others to their thinking.	→ More influence over the people around them.
Now start with a Learning Objective YOU taught recently in YOUR classroom.		
Understand the meaning & elements of rhetoric	→ Ability to persuade + recognize persuasive techniques in others	→ Being more aware + less gullible

*Note: Although this primer suggests starting with Learning Objectives, you could start with Unit Objectives, or Project Goals.

Continue to Activity 2: Supporting Competence...

Intrinsic goal-framing activity

As you're walking around the room, you notice one of your favorite students—although not the highest performing—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he “Doesn’t know what to start writing about”. You say to him...

“Have you thought about what parts of the book affected you most? What parts stuck out in your mind? You could use those thoughts to help you focus your discussions. If you're still having trouble, try brainstorming a list of what you remember from the book + narrow that list.”

Giving feedback activity

"This is the same assignment as yesterday", moaned one of your under-performing, but most hard-working students.

Repetition of a task is one of the most effective ways to learn it thoroughly.

"Shakespeare is boring", whined one of your enthusiastic, and more sociable students.

Shakespeare IS boring to those who do not have a full understanding of all its elements.

Accepting feedback activity

Refer to Activity 1 if needed
Learning Objective:

Read + analyze story excerpt

Practical skill developed from mastery of objective:

Ability to read aloud effectively

Why life would be improved by having this skill:

Reduce embarrassment + increase success in a variety of situations

Refer to Activity 2 if needed
What feedback would you give to the student that has trouble getting started with the assignment?

Refer to Activity 3 if needed
"Other teachers don't make us do this", complained one of your students. You would say...

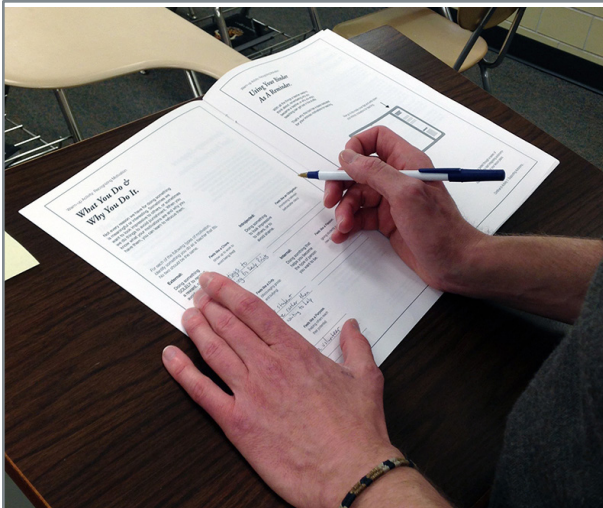
"Reading + general communication skills are the basis of all other subject areas + many job skills. To be successful in most aspects of life, the ability to read + understand what you read is essential."

"Maybe that person does not see the value in this lesson that you + I do. Or, maybe he has another approach to teaching it."

Refer to Warm-up Activity if needed
What is YOUR intrinsic motivation for teaching this particular lesson?

My intrinsic motivation is to give my students the skills needed to be effective communicators across all mediums.

Review activity



<p>External:</p> <p>Doing something SOLELY to receive a reward, or to avoid punishment.</p> <p><i>Feels like a Chore.</i> (show up to work to avoid being fired)</p> <p>attend meetings to avoid losing Pro.Devel. Points</p>	<p>Introjected:</p> <p>Doing something to look impressive to others, or to avoid shame.</p> <p><i>Feels like an Obligation.</i> (monitoring hallways before/after class)</p> <p>making it a point to always speak out during a large/faculty meeting</p>
<p>Identified:</p> <p>Doing something because you personally believe it's the right thing to do.</p> <p><i>Feels like a Duty.</i> (discouraging gossip and bullying)</p> <p>helping an upset student regain composure rather than waiting to help</p>	<p>Internal:</p> <p>Doing something that helps you become the type of person you want to be.</p> <p><i>Feels like a Passion.</i> (giving students a new perspective)</p> <p>sharing "slices of life" with classes - ex. having family photos up</p>
<p>Intrinsic:</p> <p>Doing something that makes you happy, no matter the outcome.</p> <p><i>Feels like a Purpose.</i> (helping others reach their potential)</p> <p>serving as a volunteer tutor</p>	

Warm-up activity

Now try connecting the following learning objectives to Intrinsic Goals

Learning Objective:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to identify an author's purpose in a text.	→ ability to analyze the deeper meaning	→ the process of reducing the "extra" into helps us realize actual value (or lack of)
Students will be able to develop an argument.	→ ability to form an opinion-backed by accurate support evidence	→ morals/ethics are vital in knowing self

Now start with a Learning Objective YOU taught recently in YOUR classroom.

Students will be able to comprehend word parts: prefixes/suffixes	→ ability to have ^{have} a broad vocabulary guides reading	→ unfamiliar language/concepts must be be summarized and understood throughout life
---	--	--

*Note: Although this primer suggests starting with Learning Objectives, you could start with Unit Objectives, or Project Goals.

Continue to Activity 2: Supporting Competence...

Intrinsic goal-framing activity

Place your intrinsic motivations here so you'll have them close by when you plan your lessons.

Serve and Help those students needing that extra love and support

Make learning real, relevant, and rigorous

Guide seniors to get out of their comfort zone and college/career ready

Binder reminder activity

Respond to the following scenario as if it involved one of your students

As you're walking around the room, you notice one of your favorite students—although not the highest performing—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he "Doesn't know what to start writing about". You say to him...

"This is your reflection, so there's no right or perfect way to write the essay. Try listing some of the high lights of the story line. What ~~was~~ ^{were} funny, interesting, ~~or~~ ^{and} moments that stood out to you? Let's then think about what you would have written differently..."

Continue to Activity 3: Supporting Relatedness...

Giving feedback activity

Respond to the following complaint.

Try to acknowledge or accept their sentiment without being dismissive or getting defensive (i.e. counter arguing the statement).

"This is the same assignment as yesterday", moaned one of your under-performing, but most hard-working students.

"You're close, but yesterday we focused on _____, but what's new and improved for today is that I want you to _____."

"Shakespeare is boring", whined one of your enthusiastic, and more sociable students.

"You should have heard what he said about you!" -or-
"I know that Shakespeare seems like he can't relate to 2015, but let's listen to this song's lyrics..."

Continue to Activity 4: Putting it all together...

Receiving feedback activity

Refer to Activity 1 if needed

Learning Objective:

Students will be able to research a valid web site to gather a nature-related poem.

Practical skill developed from mastery of objective:

Ability to locate proper, accurate, non-biased information with the web

Why life would be improved by having this skill:

Facts are available to us if we know how to avoid "clutter" to uncover them

Refer to Activity 2 if needed

Refer to Activity 3 if needed

What feedback would you give to the student that has trouble

"Other teachers don't make us do this", complained one of

Refer to Activity 2 if needed

What feedback would you give to the student that has trouble getting started with the assignment ?

"Remember that in the future you'll want to quickly find the best information, but with millions of web sites, do you know ~~one of our~~ what to look for ?"

Refer to Activity 3 if needed

"Other teachers don't make us do this", complained one of your students. You would say...

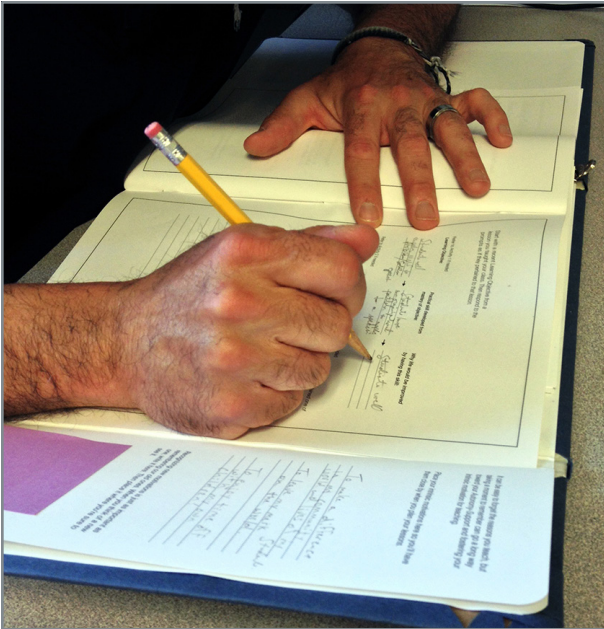
"All I know is that I may not do like Mrs./Mr., but we ~~all~~ do want all of our graduates to know multiple techniques to in the real world."

Refer to Warm-up Activity if needed

What is **YOUR** intrinsic motivation for teaching this particular lesson?

I know the challenge of conducting effective, fast, reliable internet research can be challenging, so with so much information at our finger tips, knowing shortcuts is important.

Review activity



For each of the following types of motivation, identify something you do as a teacher that fits. No two should be the same.

External: Doing something SOLELY to receive a reward, or to avoid punishment.	Feels like a Chore. (show up to work to avoid being fired)	Introjected: Doing something to look impressive to others, or to avoid shame.	Feels like an Obligation. (monitoring hallways before/after class)
Write objectives on my wall		Dressing up professionally,	
Identified: Doing something because you personally believe it's the right thing to do.	Feels like a Duty. (discouraging gossip and bullying)	Internal: Doing something that helps you become the type of person you want to be.	Feels like a Passion. (giving students a new perspective)
Conference with students for their improvement.		Stay late or come in early to work with students	
Intrinsic: Doing something that makes you happy, no matter the outcome.	Feels like a Purpose. (helping others reach their potential)		
Attend speech meet!			

Warm-up activity

Place your intrinsic motivations here so you'll have them close by when you plan your lessons.

To make a difference
in my community
world and lives of my
Students.

To leave my mark
on the world.

To enjoy time off
with my own
children.

Binder reminder activity

Now try connecting the following learning objectives to Intrinsic Goals

Learning Objective:	Practical skill developed from mastery of objective:	Why life would be improved by having this skill:
Students will be able to identify an author's purpose in a text.	Ability to understand people's meanings	Improved communication w/ loved ones.
Students will be able to develop an argument.	To support a claim.	Persuade others to change attitudes or behavior.

Now start with a Learning Objective YOU taught recently in YOUR classroom.

Students will offer logical appeals to support an argument.	Ability to strengthen persuasiveness	Became a more effective communicator
---	--------------------------------------	--------------------------------------

Intrinsic goal-framing activity

Respond to the following scenario as if it involved one of your students

As you're walking around the room, you notice one of your favorite students—although not the highest performing—is getting frustrated while trying to complete his reflective essay on the book you finished reading in class that week. With a little prodding he tells you he “Doesn’t know what to start writing about”. You say to him...

“ Why don't you make a list of aspects about the book that you liked and a list of things about the book that you didn't like? ”

Giving feedback activity

Try to acknowledge or accept their sentiment without being dismissive or getting defensive (i.e. counter arguing the statement).

“This is the same assignment as yesterday”, moaned one of your under-performing, but most hard-working students.

It may seem like that and it does have similar questions, but this practice will make you a better speaker.

“Shakespeare is boring”, whined one of your enthusiastic, and more sociable students.

A lot of people think that, but a lot of people love his work too.

Continue to Activity 4: Putting it all together...

Receiving feedback activity

Start with a recent Learning Objective from a lesson you taught your class. Then respond to the prompts as if they pertained to that lesson.

Refer to Activity 1 if needed

Learning Objective:

Students will apply MARS to problem/solution speech

→

Practical skill developed from mastery of objective:

Students have an organizational pattern to apply to a speech

→

Why life would be improved by having this skill:

Students will be able to defend their ideas

What feedback would you give to the student that has trouble getting started with the assignment ?

"Think about a problem that you or a friend experienced recently. How would you like to see this issue fixed."

"Other teachers don't make us do this", complained one of your students. You would say...

"That may be true, but you get to pick whatever problem you want to talk about!"

Refer to Warm-up Activity if needed

What is **YOUR** intrinsic motivation for teaching this particular lesson?

To see students become more effective speakers! To see them grow!

Review activity

(15.9) Figures



fig. 5.1 Spectrum of motivation (Deci and Ryan 2000a)

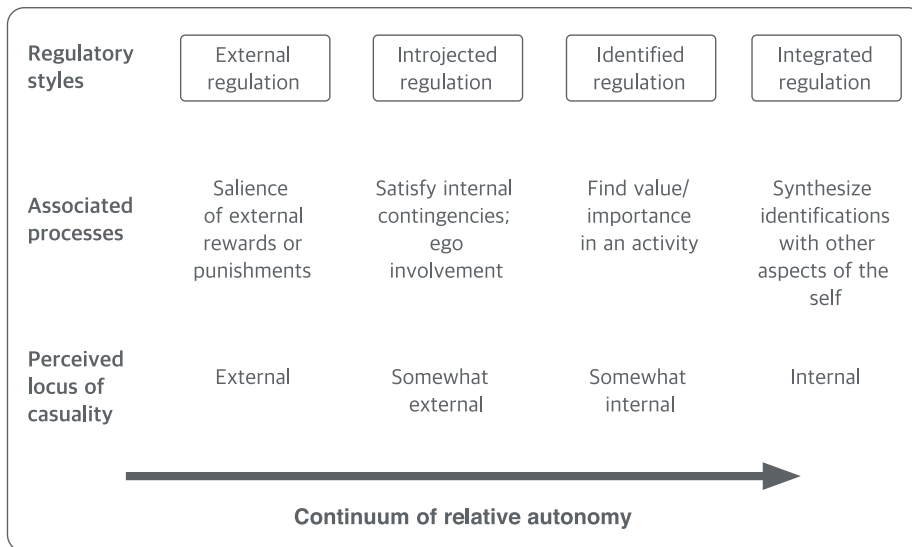


fig. 5.2 Continuum of extrinsic motivation (Niemi and Ryan 2009)

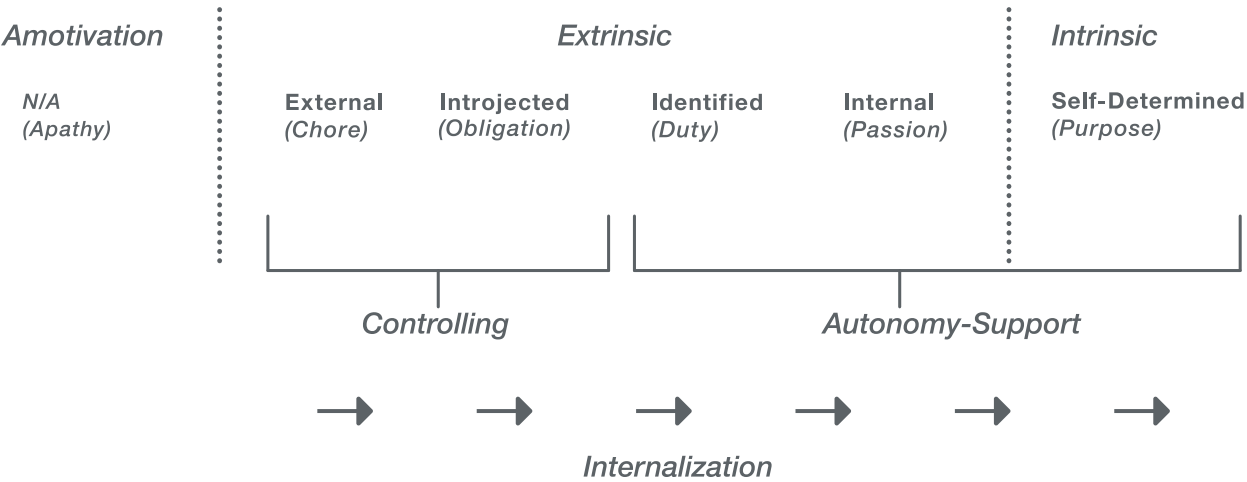


fig. 5.3 Internalization of external motivators through autonomy-support (Walters 2015)





Teacher-asked questions about an autonomy-supportive motivating style			
Pre-lesson reflection Q1: What is the goal of autonomy-supportive teaching? Q2: How is autonomy-supportive teaching unique? Q3: Does autonomy support mean permissiveness?	Motivating students Q4: How would I encourage students' initial engagement in learning activities? Q5: How could I help students maintain their engagement?	Solving problems Q6: What would I say? How might I talk? Q7: How would I solve motivational and behavioral problems?	Post-lesson reflection Q8: How do I know if I provided instruction in an autonomy-supportive way?
 <ul style="list-style-type: none"> • Take the students' perspective • Display patience to allow time for learning 	 <ul style="list-style-type: none"> • Nurture inner motivational resources • Provide explanatory rationales 	 <ul style="list-style-type: none"> • Rely on noncontrolling language • Acknowledge and accept negative effect 	 <ul style="list-style-type: none"> • Take the students' perspective • Welcome students' thoughts, feelings, goals, and behaviors • Support students' motivational development
Recommended autonomy-supportive instructional strategies			

fig. 5.4 Common questions from teachers on SDT (Reeve and Halusic 2009)

Principles

Creating organizational supports for teachers' need satisfaction during the change process	Learning groups and an implementation structure that help teachers experience new ideas and practices as valuable
--	---

Organizational Components

Small Teacher groups (10-12) that meet every 2-3 weeks throughout the year	Continual support for teacher's implementation efforts from the principal	Meetings with principal, group facilitators, and external change agents to continuously improve the change process
--	---	--

Phases

Motivational/Cognitive 1	Motivational/Cognitive 2	Implementation/Troubleshooting	Shared Responsibility
<ul style="list-style-type: none"> Teachers learn about SDT (autonomy, competence, relatedness) Facilitators of group meetings encourage open criticism from teachers Teachers share how their needs of autonomy, relatedness and competence are affected by the day's process 	<ul style="list-style-type: none"> Teachers are taught how an autonomy-supportive class is mutually beneficial to students and teachers Create experience that motivates to share their own motivations 	<ul style="list-style-type: none"> Translating SDT to practical actions teachers can apply to classroom structure Five need-supporting Features: <ol style="list-style-type: none"> 1) a voice and roll for each student 2) limiting violence 3) Mastery of basic academic skills 4) Caring figure for each student 5) minimizing competition 	<ul style="list-style-type: none"> Sharing influence and responsibility with students

fig. 5.5 School reform framework based on SDT (Assor et al. 2009)



fig. 5.6 Proposed SDT toolkit framework based on reform program and common questions (Walters 2015)



fig. 6.1 Designed solution limited to Implementation (Walters 2015)



*fig 7.1 Synthesized
human-centered design
process (Walters 2015)*



**fig 8.1 Results from
Heuristic review
(Walters 2015)**

(16) **Acknowledgements**

I would like to take this opportunity to thank my committee members, without whom this research project would have never seen the light of day: Aaron Ganci, Pamela Napier, and Paul Gestwicki.

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